Surface Water Supply of the United States 1953

Part 14. Pacific Slope Basins in Oregon and Lower Columbia River Basin

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GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1288

Prepared in cooperation with the States of Oregon and Washington and with other agencies

UNITED STATES DEPARTMENT OF THE INTERIOR

Douglas McKay, *Secretary*

GEOLOGICAL SURVEY

W. E. Wrather, *Director*

For sale by the Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C. - Price $1 (paper cover)

PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Oregon and Washington and with other agencies, by personnel of the Water Resources Division, C. G. Paulsen, chief, under the general direction of J. V. B. Wells, chief, Surface Water Branch, and B. J. Peterson, chief, Annual Reports Section.

The data were prepared under supervision of district engineers, Surface Water Branch, as follows:

N. M. Phillips----------Portland, Oreg.
F. M. Veatch----------Tacoma, Wash.

CALENDAR FOR WATER YEAR 1953

OCTOBER 1952

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

NOVEMBER 1952

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

DECEMBER 1952

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

JANUARY 1953

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

FEBRUARY 1953

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

MARCH 1953

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL 1953

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

MAY 1953

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JUNE 1953

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

JULY 1953

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

AUGUST 1953

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

SEPTEMBER 1953

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

CONTENTS

ILLUSTRATIONS

SURFACE WATER SUPPLY OF PACIFIC SLOPE BASINS IN OREGON AND LOWER COLUMBIA RIVER BASIN, 1953

SCOPE OF WORK

This volume is one of a series of 18 reports presenting measurements of stage, discharge, and content of streams, lakes, and reservoirs in the United States during the water year ending September 30, 1953. Since 1888, when the United States Geological Survey first studied streamflow in relation to problems of irrigation, similar measurements have been made at more than 12,800 gaging stations in the 48 States and at many others in the Territories of Alaska and Hawaii. On September 30, 1953, the Geological Survey and cooperating organizations were maintaining 6,750 gaging stations, including those in Alaska and Hawaii. Discharge measurements only were made at many other points in the 1953 water year, most of which are published at the end of this report.

COOPERATION

Many State, municipal, and private organizations have cooperated with the Geological Survey in this work by either furnishing or helping to collect data. Organizations that supplied data are acknowledged in station descriptions, and organizations that assisted in the collection of data through cooperative agreements with the Survey are:

Oregon: State of Oregon, C. E. Stricklin, State engineer, and B. R. Chandler, chairman, Oregon State Highway Commission; Fish Commission of Oregon, A. J. Suomela, State Fisheries Director; and the cities of Eugene, McMinnville, Portland, and Coos Bay-North Bend.

Washington: State Department of Conservation and Development, W. A. Galbraith, director, and C. J. Bartholet, Supervisor of Hydraulics; State Department of Fisheries, R. J. Schoettler, director; city of Tacoma; and Lewis and Skamania County Public Utility Districts.

Assistance in the form of funds or services was given by the Corps of Engineers, Department of the Army, in collecting records published herein for 41 gaging stations in Oregon and 8 in Washington.

Assistance was also furnished by the Forest Service, United States Department of Agriculture and the Bureau of Reclamation and Bonneville Power Administration, United States Department of the Interior.

The following organizations aided in collecting records:

Oregon: Counties of Crook, Deschutes, Jackson, Jefferson, Josephine, Klamath, and Umatilla; city of Grants Pass; The California Oregon Power Co., Pacific Power & Light Co., and Portland General Electric Co.

Washington: Pacific Power & Light Co.

DIVISION OF WORK

The stream gaging work was done by the Water Resources Division of the Geological Survey, under the direction of personnel shown in the preface. The data for stations in the several States were collected and prepared for publication in the district offices listed on following page.

State	District office	Address
Oregon a/	Portland	1001 NE. Lloyd Boulevard.
Washington	Tacoma	207 Federal Building.

a/ The work was done in collaboration with C. E. Stricklin, State engineer.

Information of a more detailed nature than that published for most of the gaging stations given in this report is on file in the district offices listed above. Provisional records of discharge prior to publication, and other unpublished data concerning the gaging-station records may usually be obtained from the district office.

DEFINITION OF TERMS AND ABBREVIATIONS

The terms of streamflow and other hydrologic data, as used in this report, are defined as follows:

Cubic foot per second (cfs) is the rate of discharge of a stream whose channel is 1 square foot in cross-sectional area and whose average velocity is 1 foot per second.

Cubic feet per second per square mile (cfsm) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Runoff in inches is the depth to which an area would be covered if all the water draining from it in a given period were uniformly distributed on its surface. The term is used for comparing runoff with rainfall, which is also usually expressed in inches.

Acre-foot is the quantity of water required to cover an acre to the depth of 1 foot and is equivalent to 43,560 cubic feet. The term is commonly used in relation to storage for irrigation.

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, 1.983471 acre-feet, or 646,317 gallons, and represents a runoff of 0.0372 inch from 1 square mile.

Stage-discharge relation is the relation between gage height and the amount of water flowing in a channel, expressed as volume per unit of time.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, a long reach of the channel, or an artificial structure.

Contents is the volume of water in a reservoir. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is so enclosed by a topographic divide that direct surface runoff from precipitation normally would drain by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER OF LISTING GAGING STATIONS

Beginning with the series of reports for the water year ending September 30, 1951, the order of listing gaging-station records was changed. In this report, in a downstream

direction along the main stem all stations on a tributary entering above a main-stem station are listed before that station. If a tributary enters between two main-stem stations, it is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. To indicate the rank of any tributary on which a gaging station is situated and the stream to which it is immediately tributary, each indention in the listing of gaging stations in the table of contents of this report represents one rank. This downstream order and system of indention show which gaging stations are on tributaries between any two stations on a main stem and the rank of the tributary on which each gaging station is situated.

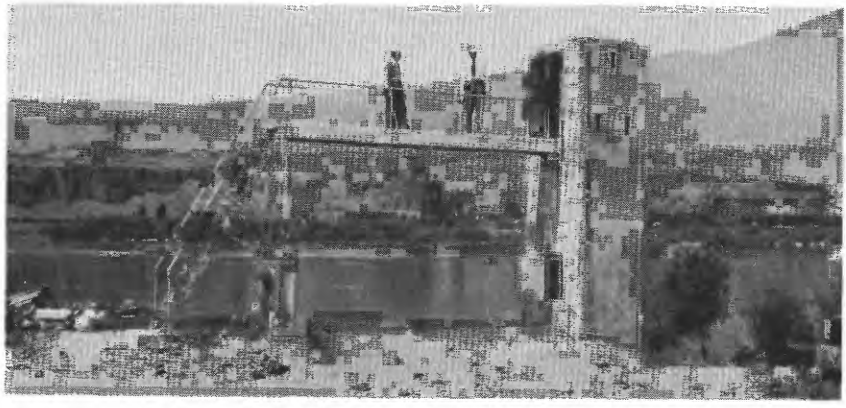
The order of listing used before the publication of the 1951 report listed first all stations on the main stem from headwaters toward mouth, then all stations on the uppermost tributary to the main stem from the tributary's source to mouth, and then all stations from source to mouth of the uppermost tributary to the tributary.

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage and measurements of discharge. In addition, observations of factors affecting the stage-discharge relation, weather records, and other information are used to supplement base data in determining the daily flow. The records of stage are obtained either from direct readings on a nonrecording gage or from a water-stage recorder that gives a continuous record of fluctuations. Measurements of discharge are made with a current meter by the general methods adopted by the Geological Survey on the basis of experience in stream gaging since 1888. These methods are described in Water-Supply Paper 888 and are also outlined in standard textbooks on the measurement of stream discharge. Typical structures in use at gaging stations are shown in figure 1.

Rating tables giving the discharge for any stage are prepared from stage-discharge relation curves defined by discharge measurements. If extensions to the rating curves are necessary to define the extremes of discharge, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs, and by other methods), velocity-area studies, and logarithmic plotting. The application of the daily mean gage height to those rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is essentially the shifting-control method.

At some gaging stations the stage-discharge relation is affected by backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in determining discharge. Information requisite for determining the slope or fall is obtained by means



A, COLUMBIA RIVER NEAR THE DALLES, OREG.
Gage shelter and stilling well.

B, WILLAMETTE RIVER AT ALBANY, OREG.

FIGURE 1.—GAGING-STATION STRUCTURES.

of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage. If so, the rate of change of stage is used as a factor in the determination of discharge.

At most gaging stations in the northern part of the United States and at some in the mountainous regions of other parts the stage-discharge relation is affected by ice during the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for other stations in the same or nearby basins. If the stage-discharge relation is affected by ice, this information is given in a note to the table. No mention is made of occasional days of ice effect if the degree of accuracy of daily records is not changed.

The data herein presented generally comprise a description of the station, a skeleton rating table, and a table showing the daily discharge and monthly and yearly discharge and runoff of the stream. Records are published for the water year which begins on October 1 and ends on September 30. A calendar for the water year 1953 is shown on page IV for the purpose of finding the day of the week for any date.

The description of the station gives the location, drainage area, records available, type and history of gages, average discharge, extremes of discharge, general remarks, and notations of revisions of the previously published record. The location of the gaging station and the drainage area are obtained from the most accurate maps available. River mileage, given under "Location" for some stations, is that determined and used by the Corps of Engineers unless otherwise noted. Under "Records available" are given the periods for which there are published records generally equivalent to those at present site. Under "Gage" are given the type of gage currently in use and the datum of the present gage above mean sea level, and a condensed history of the types, locations, and datums of previous gages used during the period of records available. Under "Average discharge" is given the average discharge for the number of years indicated. It is not given for stations having fewer than five complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height (unless it is of no importance). Unless otherwise qualified, the maximum discharge corresponds to the crest stage obtained by use of a water-stage recorder, a crest-stage indicator, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur at the same time as the maximum discharge, it is given separately. Information pertaining to the accuracy of the records and conditions which affect the natural flow at the gaging station is given under "Remarks."

Previously published records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual reports. In order to make it easier to find such revised records, a paragraph headed "Revisions (water years)" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report.

In listing the water years only one number is given; for instance, 1933 stands for the water year October 1, 1932, to September 30, 1933. If no daily, monthly, or annual figures of discharge are concerned in the revision, that fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

Skeleton rating tables are published for all stations except those at which the daily discharge for the greater part of the open-water period was determined by the shifting-control method, the slope method, or other special methods involving an equivalent adjustment to the gage height of more than one-tenth foot. Skeleton rating tables are generally not published for stations on canals.

For stations equipped with water-stage recorders, except those on streams subject to sudden or rapid fluctuation, the daily table gives the discharge corresponding to the daily mean gage height. For stations subject to such fluctuation the daily mean gage height may not indicate the true daily mean discharge, which must be obtained by averaging the discharge for parts of the day or by using the discharge integrator, an instrument for obtaining the daily mean discharge from a continuous gage-height graph and containing, as an essential element, a curve representing the stage-discharge relation at the station. For stations equipped with nonrecording gages, the table of daily discharge gives the discharge corresponding to once-daily readings of the gage, or to the mean of twice-daily readings, or to the mean gage height determined from gage-height graphs based on gage readings. For periods of rapidly changing stage, the daily mean discharge is determined from gage-height graphs based on gage readings, the frequency of which is stated in the station description.

In the table of daily discharge, the values for the maximum day and the minimum day for each month are underlined. If the value is repeated, it is underlined only on the first day of its occurrence.

In the monthly summary below the daily table, the line headed "Total" gives the sum of the daily values; it is the total cfs-days for the month. The line headed "Mean" gives the average flow in cubic feet per second during the month. Runoff for the month may be expressed in cubic feet per second per square mile (line headed "Cfsm"), or in inches (line headed "In."), or in acre-feet (line headed "Ac-ft"). Values for cubic feet per second per square mile and runoff in inches are omitted if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches.

In the yearly summary below the monthly summary, the values of maximum are the maximum daily discharges, not the momentary discharges when the water was at crest stage. Likewise, the minimums in this summary are the minimum daily discharges.

Peak discharges and the times of their occurrence and corresponding gage heights of most stations are listed below the table of daily and monthly discharge. All independent peaks above the selected base are given. The base discharge, which is given in parentheses, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man.

Footnotes to the table of daily discharge indicate periods when discharge was computed or estimated by unusual or special methods during periods of no gage-height record and ice effect, or by other effects that reduce the degree of accuracy of the records. Days on which discharge measurements were made are indicated by asterisk and footnote unless they were made at frequent regular intervals, in which instance the general frequency of discharge measurements is given under "Remarks" in the station description.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is usually given in the first report in which data for the reservoir are published, but it is omitted from succeeding reports.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretation of records.

The station description states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good," less than 10 percent; "fair," less than 15 percent; and "poor," probably more than 15 percent. The records of monthly and yearly mean discharge and runoff are, in general, more nearly accurate than the daily records.

Runoff at some stations, as indicated by the monthly mean, may vary widely from natural runoff, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, values of cubic feet per second per square mile and runoff in inches are not published unless storage or diversion records are included to indicate the extent of the regulation or diversion, or unless satisfactory adjustments can be made for changes in contents of reservoirs or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur when relatively large negative adjustments are made or when evaporation is large in comparison with the observed discharge.

Many gaging stations on streams in the irrigated areas of the United States are situated above most of the diversions from those streams, and therefore the discharge recorded does not actually show the water supply available at the stations for further development, because water must first be supplied to existing irrigation systems.

PUBLICATIONS

To facilitate publication of the annual series of reports, the area of the United States is divided into 14 parts whose boundaries coincide with certain natural drainage lines. Formerly, the results of streamflow measurements were published in 14 volumes, one for each of the 14 parts. Beginning with the reports for 1951, the records are published in 18 volumes, there being 2 volumes each for Parts 1, 2, 3, and 6. The boundaries of the various parts are indicated by the following list and the map in figure 2.

Part 1. North Atlantic slope basins, in two volumes:
- A, North Atlantic slope basins, Maine to Connecticut.
- B, North Atlantic slope basins, New York to York River.

2. South Atlantic slope and eastern Gulf of Mexico basins, in two volumes:
- A, South Atlantic slope basins, James River to Savannah River.
- B, South Atlantic slope and eastern Gulf of Mexico basins, Ogeechee River to Pearl River.

3. Ohio River basin, in two volumes:
- A, Ohio River basin except Cumberland and Tennessee River basins.
- B, Cumberland and Tennessee River basins.

4. St. Lawrence River basin.
5. Hudson Bay and upper Mississippi River basins.
6. Missouri River basin, in two volumes:
- A, Missouri River basin above Sioux City, Iowa.
- B, Missouri River basin below Sioux City, Iowa.

7. Lower Mississippi River basin.
8. Western Gulf of Mexico basins.
9. Colorado River basin.
10. The Great Basin.
11. Pacific slope basins in California.
12. Pacific slope basins in Washington and upper Columbia River basin.
13. Snake River basin.
14. Pacific slope basins in Oregon and lower Columbia River basin.

Water-supply papers and other publications of the Geological Survey containing data on the water resources of the United States may be purchased or consulted as follows:

1. Copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., who will, on application, furnish lists giving prices. A list of Geological Survey publications may also be obtained by applying to the Director, Geological Survey, Washington, D. C.

2. Sets of the reports may be consulted in the libraries of the principal cities in the United States.

3. Sets are available for consultation in the offices of the Water Resources Division of the Geological Survey. Addresses of the offices in the area covered by this report are given on page 2.

Early records of the flow of streams in the United States are published in the reports listed below. In many of these reports records for years earlier than those indicated have been included for some streams.

Streamflow data for the years 1884-1901, in reports of the Geological Survey

(A = Annual Report; B = Bulletin)

Report	Character of data	Year
10th A, pt. 2	Descriptive information only.	
11th A, pt. 2	Monthly discharge and descriptive information.....	1884 to September 1890.
12th A, pt. 2	....do.....	1884 to June 30, 1891.
13th A, pt. 3	....do.....	1884-92.
14th A, pt. 2	Monthly discharge.....	1888-93.
B 131.....	Descriptions, measurements, gage heights, and ratings.....	1893-94.
16th A, pt. 2	Descriptive information only.	
B 140.....	Descriptions, measurements, gage heights, ratings, and monthly discharge.	1895.
WSP 11.....	Gage heights.....	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge..	1895-96.
WSP 15.....	Descriptions, measurements, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries above Kansas River.	1897.
WSP 16.....	Descriptions, measurements, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries above Kansas River.	1897.

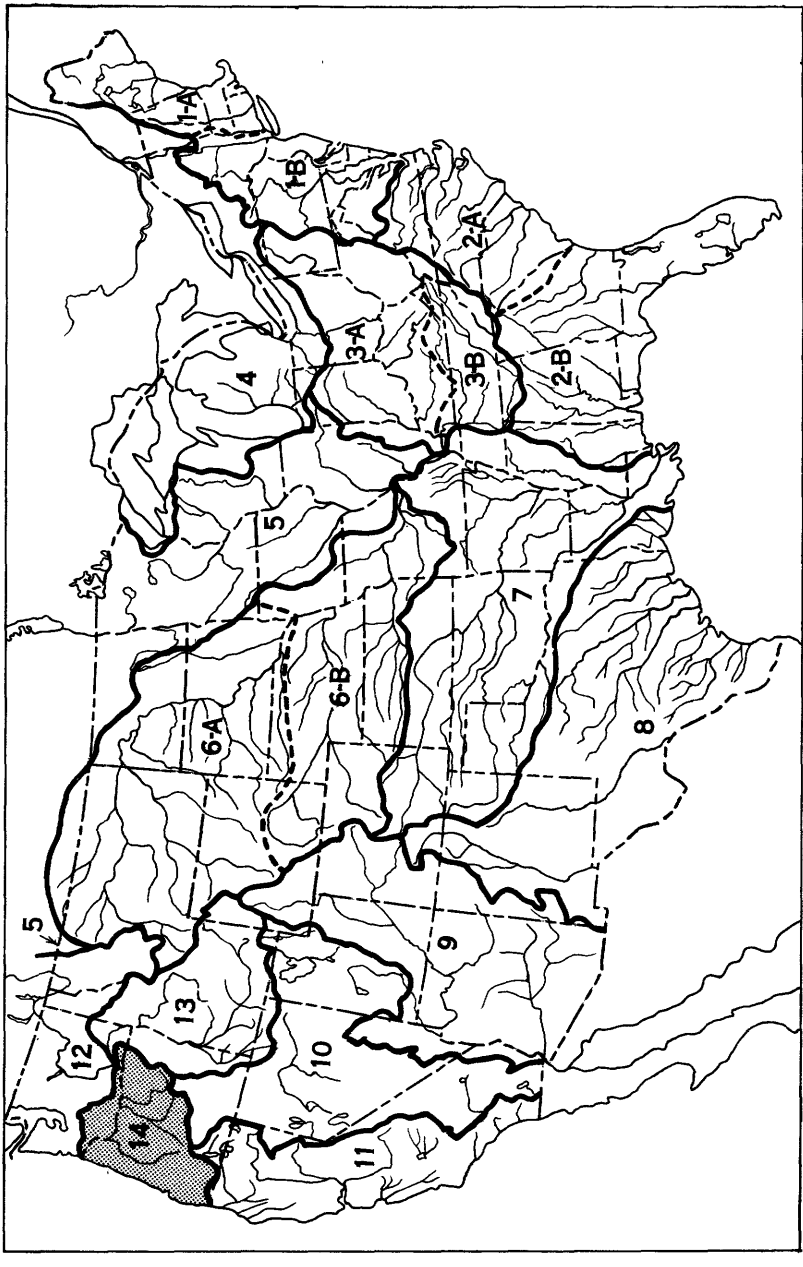


Figure 2.--Map of the United States showing areas covered by the 18 annual volumes on surface-water supply. The area covered by this report is shaded.

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Streamflow data for the years 1884-1901, in reports of the Geological Survey--Continued

(A = Annual Reports; B = Bulletin)

Report	Character of data	Year
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge.	1897.
WSP 27.....	Measurements, ratings, and gage heights of streams east of the Mississippi River, and Missouri River and tributaries.	1898.
WSP 28.....	Measurements, ratings, and gage heights of streams west of the Mississippi River, except Missouri River and tributaries.	1898.
20th A, pt. 4	Monthly discharge.....	1898.
WSP 35 to 39.	Descriptions, measurements, gage heights, and ratings.....	1899.
21st A, pt. 4	Monthly discharge.....	1899.
WSP 47 to 52.	Descriptions, measurements, gage heights, and ratings.....	1900.
22d A, pt. 4.	Monthly discharge.....	1900.
WSP 65, 66...	Descriptions, measurements, gage heights, and ratings.....	1901.
WSP 75.....	Monthly discharge.....	1901.

Note.--Records for all stations in Oregon are contained in WSP 370, superseding all reports in this table for these stations.

Reports on surface-water supply containing records from 1899 to date for drainage basins in this report are listed below. The data for any particular gaging station will, in general, be found in the reports covering the years during which the station was maintained.

Numbers of water-supply papers containing results of stream measurements in Pacific slope basins in Oregon and lower Columbia River basin, 1899-1953

Year	WSP	Year	WSP	Year	WSP	Year	WSP	Year	WSP
1899	38	1911	312	1923	574	1934	769	1944	1014
1900	51	1912	332-C	1924	594	1935	794	1945	1044
1901	66, 75	1913	362-C	1925	614	1936	814	1946	1064
1902	85	1914	394	1926	634	1937	834	1947	1094
1903	100	1915	414	1927	654	1938	864	1948	1124
1904	135	1916	444	1928	674	1939	884	1949	1154
1905	a177, 178	1917	464	1929	694	1940	904	1950	1184
1906	214	1918	484	1930	709	1941	934	1951	1218
1907-8	252	1919-20	514	1931	724	1942	964	1952	1248
1909	272	1921	534	1932	739	1943	984	1953	1288
1910	292	1922	554	1933	754				

a Rogue, Umpqua, and Siletz Rivers only.
Note.--Records for all stations in Oregon through September 1910 are contained in WSP 370, superseding all earlier reports for these stations.

The records at most of the stations discussed in these reports extend over many years. Discharge measurements at many points other than regular gaging stations have been made each year and are published under "Miscellaneous discharge measurements" at the end of each report. The streams and points of measurement are listed in the same order as the streams and gaging stations in the body of the report. An index of the records obtained before 1904 has been published in Water-Supply Paper 119.

Each of the reports on the surface-water supply for the year 1939 (Water-Supply Paper 884 for the Pacific slope basins in Oregon and lower Columbia River basin) contains, for the area included in that report, a summary of yearly discharge at gaging stations at which 10 or more complete years of record had been collected. These summaries were reprinted separately.

Reports also have been published that are compilations of records for various areas, usually a single State or drainage basin. These reports contain records previously published (some of which may have been revised), as well as some records not contained in the annual series of water-supply papers. The following table lists reports of this type for the Pacific slope basins in Oregon and lower Columbia River basin.

Reports containing compilations of records of discharge by States and drainage basins

WSP	Period	Report
370.....	1878-1910	Surface water supply of Oregon.
492.....	1878-1919	Summary of hydrometric data in Washington.
870.....	1919-35	Summary of records of surface waters of Washington.

Records of discharge have been published also in State reports. Some of these are not contained in the publications of the Geological Survey or are revisions of records pre-

viously published in its water-supply papers. The following table contains a list of these reports for the area covered by this report.

State reports containing compilations of records of discharge

State	Period	Report	Issued by
Oregon.....	1878-1914	Bull. 4, Water resources of the State of Oregon.	Office of the State Engineer.
Do.....	1914-24	Bull. 7, Water resources of the State of Oregon.	Do.
Do.....	1924-30	Bull. 8, Water resources of the State of Oregon.	Do.
Do.....	1930-36	Bull. 9, Water resources of the State of Oregon.	Do.
Do.....	1936-41	Bull. 10, Water resources of the State of Oregon.	Do.
Washington....	1878-1953	Bull. 6, Monthly and yearly summaries of hydrometric data.	Department of Conservation and Development.

Note.--In addition to the records contained in the reports listed above, the States of Oregon and Washington have issued annual or biennial reports in which are contained records of discharge.

The reports listed in the foregoing tables contain the customary records of discharge collected during the systematic operation of gaging stations. Detailed information on the stage and discharge of many streams during major floods has been included in special reports on these floods published by the Geological Survey. The more recent of these special reports also contain other pertinent hydrologic information and analyses and compilations of data relating to earlier notable floods. The following list gives the numbers and titles of these reports:

Report

WSP 96: Destructive floods in the United States in 1903
WSP 771: Floods in the United States, magnitude and frequency.
WSP 1080: Floods of May-June 1948 in Columbia River basin.
WSP 1137-E: Floods of 1950 in Southwestern Oregon and Northwestern California.
WSP 1137-I: Summary of floods in the United States during 1950.
Cir. 191: Floods in western Washington, frequency and magnitude in relation to drainage-area characteristics.

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The table below contains a list of gaging stations for the area covered by this report, at which records of discharge were collected during the water year October 1952 to September 1953 by agencies other than the Geological Survey. The records of these stations are not contained in publications of the Geological Survey, nor have they been published elsewhere.

Records of discharge collected by agencies other than the Geological Survey

Stream	Location	Period	Collected by
Amazon Creek.....	At 19th Street, in Eugene, Oreg.	1950-53	Corps of Engineere.
Big Butte Creek, North Fork.	SW¼ sec. 2, T. 35 S., R. 2 E., 1 mile north of Butte Falls, Oreg.	1928-53	Oregon State engineer.
Big Butte Springs.....	Sec. 17, T. 35 S., R. 3 E., 4 miles east of Butte Falls, Oreg.	1930-53	Do.
Big Marsh Creek.....	SW¼ sec. 20, T. 24 S., R. 7 E., at Hoey Ranch, near Crescent, Oreg.	1924, 1928-53*	Do.
Deschutes River.....	SW¼ sec. 23, T. 21 S., R. 9 E., ½ mile upstream from bridge at Pringle Falls, 7 miles northwest of Lapine, Oreg.	1915-17, 1922-53*	Do.
Do.....	N½ sec. 7, T. 20 S., R. 11 E., ½ mile below Little Deschutes River, at Peters Ranch, near Lapine, Oreg.	1944-53	Do.
Do.....	SW¼ sec. 31, T. 19 S., R. 11 E., ½ mile below Spring River, near Lapine, Oreg.	1906-9, 1914, 1931-32, 1944-53*	Do.
Do.....	SW¼ sec. 9, T. 19 S., R. 11 E., below Benham Falls, near Bend, Oreg.	1943-53	Do.
Do.....	SW¼ sec. 4, T. 19 S., R. 11 E., ½ mile above Dillon Falls, at Ryan Ranch, near Bend, Oreg.	1943-53	Do.
Do.....	SW¼ sec. 27, T. 18 S., R. 11 E., above Lava Island, near Bend, Oreg.	1943-53	Do.

* Records for some earlier years contained in water-supply papers published by the Geological Survey.

Records of discharge collected by agencies other than the Geological Survey--Continued

Stream	Location	Period	Collected by
Deschutes River.....	Near center sec. 7, T. 18 S., R. 12 E., ½ mile above head of millpond, near Bend, Oreg.	1943-53	Oregon State engineer.
Evans Creek.....	Sec. 29, T. 34 S., R. 2 W., 3½ miles above West Fork, 7½ miles north of Sams Valley, Oreg.	1942-53	Do.
Do.....	SW¼ sec. 26, T. 34 S., R. 3 W., near Bybee Springs, 7 miles northwest of Sams Valley, Oreg.	1940-53	Do.
Fish Lake Dam, tunnel at.	SW¼ sec. 3, T. 37 S., R. 4 E., 14 miles east of Lake Creek, Oreg.	1929-53	Do.
Fivemile Creek.....	SW¼ sec. 27, T. 4 S., R. 29 E., 12 miles northwest of Ukiah, Oreg.	1928-30, 1932-33, 1935-44, 1946-47, 1949-53	Do.
Fourbit Creek.....	Near northwest corner sec. 26, T. 35 S., R. 3 E., 7 miles southeast of Butte Falls, Oreg.	1949-53	Do.
Grave Creek.....	NW¼SW¼ sec. 7, T. 34 S., R. 5 W., 1½ miles west of Placer, Oreg.	1929-30, 1932-53*	Do.
Jumpoff Joe Creek.....	SW¼ sec. 32, T. 34 S., R. 5 W., 7 miles northeast of Merlin, Oreg.	1929-53*	Do.
Little Butte Creek....	SE¼ sec. 19, T. 36 S., R. 2 E., at Lake Creek, Oreg.	1922-24, 1927-47, 1949-53	Do.
Little Butte Creek, North Fork.	Sec. 21, T. 36 S., R. 2 E., above Rogue River Valley Canal intake, near Lake Creek, Oreg.	1932-53*	Do.
Little Butte Creek, South Fork.	NE¼ sec. 21, T. 37 S., R. 4 E., 1 mile south of Big Elk ranger station, near Lake Creek, Oreg.	1932-53*	Do.
Little Walla Walla River.	George St., in Milton, Oreg.	1932-53	Do.
Ochoco Creek.....	NE¼ sec. 6, T. 15 S., R. 17 E., below Ochoco Reservoir, 6 miles east of Prineville, Oreg.	1919-53	Do.
Ochoco Reservoir.....	NW¼ sec. 5, T. 15 S., R. 17 E., 6 miles east of Prineville, Oreg.	1918-53	Do.
Rancheria Creek.....	SE¼ sec. 17, T. 35 S., R. 3 E., 4 miles east of Butte Falls, Oreg.	1935-50, 1951-53	Do.
Willow Creek.....	Sec. 28, T. 35 S., R. 3 E., 6 miles southeast of Butte Falls, Oreg.	1949-53	Do.

* Records for some earlier years contained in water-supply papers published by the Geological Survey.

Note.--Records through 1941 collected by the Oregon State engineer (some in cooperation with the Bureau of Reclamation of the U. S. Department of the Interior) are contained in bulletins published by that officer. (See page 11, "State reports containing compilations of records of discharge.") The other records listed in this table have not been published.

Streamflow during the 1953 water year was characterized by deficient runoff during October, November, and December and generally well above normal for the remainder of the water year in the Pacific slope basins in Oregon and lower Columbia River basin. Low flow during the first three months of the water year caused curtailment of power generation which was relieved by floods occurring west of the Cascades during January. Few new maximum peak discharges were caused by January flooding although the runoff was record-high for January for many stations west of the Cascades. For two key gaging stations in the area covered by this report, a comparison of the monthly discharge during the 1953 water year with the median discharge for the 25-year period 1921-45 is shown below.

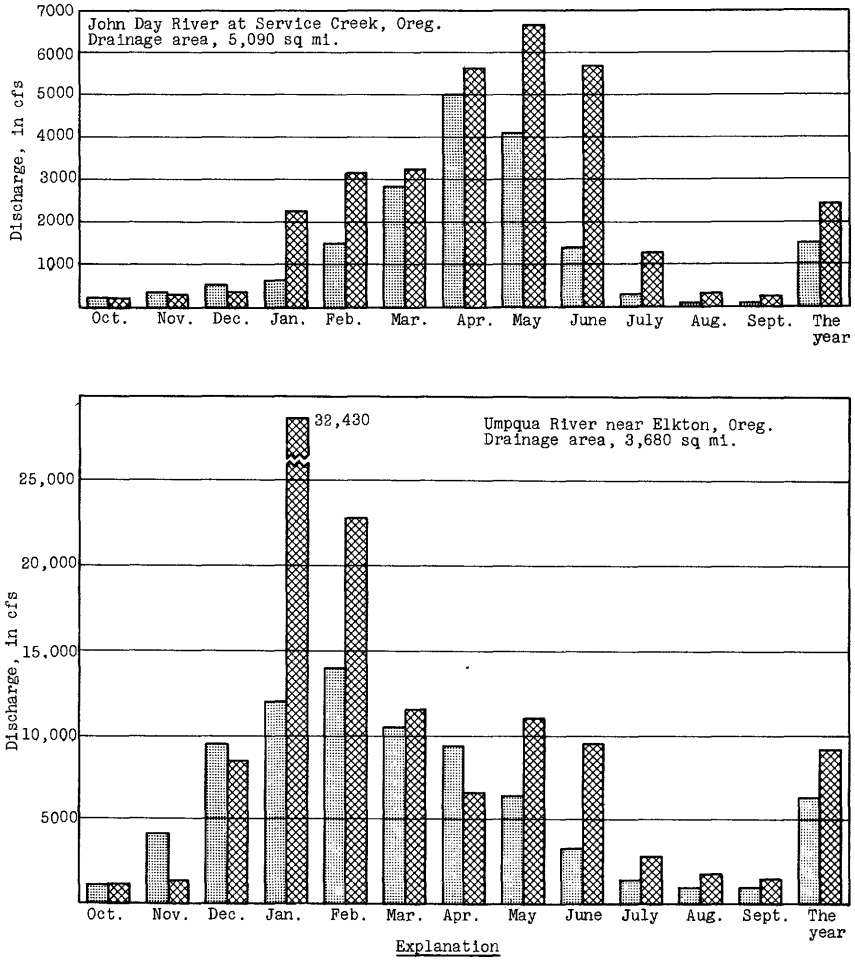

Figure 3.--Comparison of discharge at two key gaging stations during 1953 water year with median discharge for 25-year period.

LOWER COLUMBIA RIVER BASIN

WALLA WALLA RIVER BASIN

South Fork Walla Walla River near Milton, Oreg.

Location.--Lat 45°50', long. 118°10', in NE¼ sec. 15, T. 4 N., R. 37 E., on right bank 1 mile upstream from Pacific Power & Light Co.'s penstock intake and 13 miles southeast of Milton.

Drainage area.--63 sq mi, approximately.

Records available.--February to October 1903 (gage heights only), August 1906 to November 1917 (incomplete), May 1931 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 2,050 ft (from river-profile map). Prior to Oct. 18, 1931, staff gages at several sites within 1½ miles of present site at various datums. Oct. 18, 1931, to Mar. 22, 1934, water-stage recorder at site three-quarters of a mile downstream at different datum.

Average discharge.--29 years (1908-15, 1931-53), 175 cfs.

Extremes.--Maximum discharge during year, 930 cfs Jan. 18 (gage height, 3.09 ft), from rating curve extended above 450 cfs; minimum, 114 cfs Dec. 23-28.
1906-17, 1931-53: Maximum discharge recorded, 2,430 cfs Dec. 12, 1946 (gage height, 4.20 ft), from rating curve extended above 240 cfs; minimum, 72 cfs Feb. 14, 1932.
Maximum stage known, about 6 ft Mar. 31, 1931, present site and datum.

Remarks.--Records good. No diversion or regulation above station.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 24				Mar. 25 to Sept. 30			
1.5	101	2.3	360	1.5	111	2.3	380
1.7	147	2.7	600	1.7	157	2.7	620
2.0	242	3.0	840	2.0	247		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	120	116	118	400	211	220	330	*294	170	126	122
2	118	120	120	122	343	198	207	290	298	166	126	122
3	118	118	118	127	622	186	201	281	294	168	126	122
4	118	118	120	124	600	179	198	298	285	165	128	*122
5	118	118	118	122	*410	176	207	345	274	162	128	122
6	118	118	120	122	356	176	204	395	281	160	126	122
7	118	120	122	124	343	179	196	415	326	157	126	122
8	118	120	120	127	309	189	190	350	308	154	126	122
9	118	120	118	162	267	*215	184	294	285	152	126	119
10	118	118	122	156	242	235	181	266	277	150	124	119
11	118	118	124	147	225	232	179	255	281	147	124	119
12	118	120	132	167	208	225	*179	262	308	144	124	119
13	118	122	130	189	202	205	176	281	330	*142	124	119
14	118	122	127	218	198	192	173	298	303	142	124	119
15	118	122	127	189	189	186	173	308	281	140	124	117
16	118	120	124	205	186	186	179	326	270	134	124	117
17	118	118	122	442	186	176	240	350	258	134	124	119
18	118	118	122	768	182	176	262	360	251	132	*124	*119
19	118	118	120	452	*176	186	277	448	240	130	122	119
20	120	118	120	*405	173	208	330	395	223	130	122	119
21	122	118	118	351	170	205	365	350	213	128	122	119
22	122	118	116	294	170	215	370	308	207	126	122	119
23	120	118	114	572	170	271	*390	277	201	128	122	119
24	118	116	114	395	170	500	355	270	196	130	128	119
25	118	116	116	313	167	557	365	255	193	130	126	117
26	118	116	114	267	170	360	395	258	190	128	126	117
27	118	116	114	225	176	294	490	258	184	128	126	119
28	118	116	114	218	215	281	599	258	184	128	126	122
29	120	116	*116	222	-	251	472	285	179	128	124	122
30	122	116	118	264	-	240	395	281	*173	128	124	119
31	120	-	120	294	-	233	-	285	-	128	122	-
Total	3,678	3,552	3,716	7,901	7,225	7,323	8,352	9,632	7,587	4,393	3,866	3,592
Mean	119	118	120	255	258	236	278	311	253	142	125	120
Cfsm	1.89	1.87	1.90	4.05	4.10	3.75	4.41	4.94	4.02	2.25	1.98	1.90
In.	2.17	2.10	2.19	4.66	4.27	4.32	4.93	5.69	4.48	2.59	2.28	2.12
Ac-ft	7,300	7,050	7,370	15,670	14,330	14,520	16,570	19,100	15,050	8,710	7,670	7,120

Calendar year 1952: Max 586 Min 114 Mean 192 Cfsm 3.05 In. 41.54 Ac-ft 139,600
Water year 1952-53: Max 768 Min 114 Mean 194 Cfsm 3.08 In. 41.80 Ac-ft 140,500

Peak discharge (base, 600 cfs).--Jan. 18 (6:30 a.m.) 930 cfs (3.09 ft); Jan. 23 (7 a.m.) 694 cfs (2.83 ft); Feb. 3 (8 p.m.) 920 cfs (3.08 ft); Mar. 24 (12 p.m.) 742 cfs (2.89 ft); Apr. 27 (12 p.m.) 716 cfs (2.82 ft).

* Discharge measurement made on this day.

North Fork Walla Walla River near Milton, Oreg.

Location.--Lat 45°54', long. 118°16', in NW¼ sec. 23, T. 5 N., R. 36 E., on right bank 1¼ miles upstream from confluence with South Fork and 5 miles southeast of Milton.

Drainage area.--46 sq mi, approximately.

Records available.--October 1940 to September 1953 in reports of Geological Survey. December 1929 to September 1941 in reports of State engineer.

Gage.--Water-stage recorder. Altitude of gage is 1,470 ft (from river-profile map). Prior to Oct. 15, 1948, water-stage recorders at several sites three-quarters of a mile downstream at various datums.

Average discharge.--23 years (1930-53), 48.7 cfs.

Extremes.--Maximum discharge during year, 655 cfs Feb. 3 (gage height, 5.50 ft); minimum, 3 cfs Aug. 18-21, Sept. 1-3, 6-8, 10-16.
1929-53: Maximum discharge observed, 1,980 cfs Dec. 12, 1946 (gage height, 6.97 ft, site and datum then in use), from rating curve extended above 230 cfs; minimum, 1 cfs Aug. 8-17, 1936, Aug. 7-11, 1940.

Remarks.--Records fair. Diversions above station for irrigation of about 220 acres; no regulation.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6	7	7	10	216	82	103	130	*85	18	5	5
2	5	7	8	11	201	71	94	114	84	18	6	3
3	6	7	9	13	392	64	88	104	79	17	6	4
4	6	7	10	14	452	60	84	105	76	16	6	5
5	5	7	9	13	*260	55	87	118	72	16	6	5
6	6	7	9	12	215	54	87	136	66	16	6	3
7	6	7	10	12	203	54	84	140	76	14	6	3
8	6	7	10	12	165	56	82	122	75	14	6	4
9	5	7	9	22	126	*67	79	102	73	13	6	5
10	5	7	9	28	101	76	79	90	69	13	6	4
11	5	7	10	23	82	74	79	82	66	12	6	4
12	5	8	11	24	68	71	*79	78	80	10	6	3
13	6	9	11	30	63	64	79	73	75	*8	5	3
14	6	9	10	67	56	58	74	75	68	8	4	3
15	6	9	10	57	52	53	71	76	62	10	5	3
16	*6	8	9	55	48	52	73	79	58	10	5	3
17	6	8	9	160	47	48	141	82	55	11	5	4
18	6	8	9	350	45	47	165	82	50	11	*4	*4
19	6	8	8	246	*40	53	158	120	47	8	4	5
20	6	8	8	177	39	71	168	132	42	8	4	5
21	6	8	8	157	37	70	182	116	34	7	3	5
22	7	8	8	145	38	80	*190	104	31	7	5	4
23	7	8	8	396	36	135	206	94	29	7	5	4
24	7	8	8	253	36	278	195	92	26	8	6	5
25	6	7	8	193	36	389	192	84	25	8	5	5
26	6	7	8	161	37	227	209	84	26	7	6	5
27	6	7	8	137	40	168	500	84	23	7	5	5
28	6	7	8	134	74	148	275	82	21	7	6	6
29	6	7	*8	144	-	130	202	88	23	6	7	6
30	7	7	10	176	-	120	158	88	*21	6	6	6
31	7	-	11	184	-	112	-	86	-	6	6	-
Total	185	226	278	3,416	3,205	3,087	4,263	3,042	1,617	327	167	129
Mean	6.0	7.5	9.0	110	114	99.6	142	98.1	53.9	10.5	5.4	4.3
Ac-ft	367	448	551	6,780	6,360	6,120	8,460	6,030	3,210	649	331	256

Calendar year 1952: Max 255 Min 5 Mean 44.2 Ac-ft 32,080
Water year 1952-53: Max 500 Min 3 Mean 54.6 Ac-ft 39,560

Peak discharge (base, 300 cfs).--Jan. 18 (4 p.m.) 476 cfs (4.78 ft); Jan. 23 (6 a.m.) 542 cfs (5.05 ft); Feb. 3 (10 p.m.) 655 cfs (5.50 ft); Mar. 25 (1:30 a.m.) 485 cfs (4.85 ft); Apr. 27 (7 p.m.) 566 cfs (5.12 ft).

* Discharge measurement made on this day.

Mill Creek near Walla Walla, Wash.

Location.--Lat 46°00', long. 118°07', in SE¼SE¼ sec. 12, T. 6 N., R. 37 E., on left bank 4 miles downstream from city of Walla Walla diversion dam, 4½ miles upstream from Blue Creek, and 11½ miles southeast of Walla Walla.

Drainage area.--60 sq mi (revised), approximately.

Records available.--August 1913 to September 1917, April to September 1938, October 1939 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 2,000 ft above mean sea level, unadjusted. Prior to Oct. 1, 1938, staff gages on left bank at about same sites at different datums. Oct. 11 to Nov. 15, 1939, staff gage at same site at datum 13.24 ft higher.

Average discharge.--18 years (1913-17, 1939-53), 99.2 cfs.

Extremes.--Maximum discharge during year, 1,400 cfs Feb. 3 (gage height, 17.07 ft); minimum, 21 cfs Nov. 4.
1913-17, 1938, 1939-53: Maximum discharge, 1,920 cfs Feb. 24, 1950 (gage height, 17.10 ft), from rating curve extended above 620 cfs by logarithmic plotting; minimum observed, 16 cfs Oct. 11-15, 1939.

Remarks.--Records good except those for period of shifting control or ice effect, which are fair. City of Walla Walla diverts about 22 cfs 4 miles above station for municipal use. No regulation.

Rating tables, water year 1952-53, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 17-22)

Oct. 1 to Jan. 16		Jan. 17 to Sept. 30			
14.5	28	14.5	25	15.5	225
14.7	53	14.8	49	16.0	470
15.0	113	15.0	82	16.5	830
15.4	239	15.2	128	17.0	1,320

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	40	35	39	395	170	160	214	123	55	40	39
2	37	40	38	43	306	151	142	184	123	54	40	39
3	36	39	37	49	757	145	131	164	116	54	40	37
4	36	50	40	47	385	118	123	160	113	54	41	37
5	37	49	43	46	315	108	126	174	110	52	41	37
6	37	35	43	43	301	106	126	197	108	52	40	37
7	37	34	43	45	241	103	120	211	110	52	39	37
8	37	34	39	*45	204	113	118	180	116	50	39	37
9	37	34	37	104	170	137	108	148	118	49	39	36
10	37	34	45	92	148	154	103	128	113	49	39	37
11	37	34	43	80	131	151	99	118	110	48	37	35
12	37	35	46	95	120	*145	99	116	118	46	37	36
13	37	38	43	142	116	128	97	120	120	46	37	36
14	37	39	40	163	108	116	92	137	113	46	37	36
15	38	37	40	131	118	110	92	134	110	46	37	36
16	*39	36	39	183	126	108	*103	134	103	45	36	36
17	39	36	39	830	123	103	194	134	97	45	36	36
18	39	35	38	*992	118	101	222	137	90	44	35	36
19	38	35	38	*512	103	108	218	180	86	44	35	36
20	38	*35	38	310	90	128	237	160	78	44	*35	36
21	39	35	37	261	92	131	249	*160	75	42	36	36
22	39	34	37	237	86	145	245	142	69	42	35	36
23	38	34	36	609	86	204	245	137	68	42	36	36
24	39	b32	35	365	86	482	214	131	*66	42	41	36
25	40	b30	35	257	86	694	208	120	64	42	40	36
26	39	b30	35	197	90	360	218	120	62	42	39	36
27	39	b30	36	*160	97	265	270	118	61	41	40	36
28	39	31	35	164	164	233	385	116	60	41	42	39
29	39	32	36	197	-	204	306	128	60	41	41	37
30	39	32	40	261	-	190	257	123	56	*40	40	37
31	39	-	39	288	-	180	-	120	-	40	39	-
Total	1,176	1,069	1,205	6,987	5,162	5,591	5,307	4,545	2,816	1,430	1,189	1,097
Mean	37.9	35.6	38.9	225	184	180	177	147	93.9	46.1	38.4	36.6
Ac-ft	2,330	2,120	2,390	13,860	10,240	11,090	10,530	9,010	5,590	2,840	2,360	2,180

Calendar year 1952: Max 494 **Min** 30 **Mean** 96.2 **Ac-ft** 69,840
Water year 1952-53: Max 992 **Min** 30 **Mean** 103 **Ac-ft** 74,540

Peak discharge (base, 700 cfs).--Jan. 18 (3 p.m.) 1,310 cfs (17.12 ft); Jan. 23 (7 a.m.) 766 cfs (16.48 ft); Feb. 3 (7 p.m.) 1,400 cfs (17.07 ft); Mar. 25 (12:30 a.m.) 983 cfs (16.67 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Blue Creek near Walla Walla, Wash.

Location (revised).--Lat 46°03'30", long. 118°08'10", in SW¼NW¼ sec. 25, T. 7 N., R. 37 E., on right bank 1 mile upstream from mouth and 10 miles east of Walla Walla.

Drainage area.--17.0 sq mi.

Records available.--October 1939 to September 1953.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,700 ft above mean sea level, unadjusted. Prior to Oct. 1, 1950, at datum 1,700 ft lower.

Average discharge.--14 years, 16.0 cfs.

Extremes.--Maximum discharge during year, 253 cfs Feb. 3 (gage height, 42.13 ft); maximum gage height, 42.15 ft Jan. 18; minimum discharge, 0.6 cfs Nov. 25, Aug. 20 (gage height, 40.28 ft).

1939-53: Maximum discharge, 725 cfs Dec. 28, 1945 (gage height, 43.35 ft, present datum), from rating curve extended above 400 cfs; minimum observed, 0.1 cfs Oct. 14, 1939, but may have been less during periods of no gage-height record Oct. 1-11, 15, 1939.

Remarks.--Records fair except those for periods of ice effect or doubtful or no gage-height record, which are poor. No known diversion or regulation.

Revisions (water years).--WSP 984: 1942.

Rating table, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

40.3	0.7	41.0	31
40.4	1.9	41.3	67
40.5	4.2	41.6	121
40.6	7.4	41.8	167
40.8	16.5		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.0	1.4	1.3	1.9	88	d34	34	39	12	2.0	1.0	1.0
2	1.0	1.6	1.4	2.4	69	d33	29	34	11.5	1.9	1.0	1.0
3	1.0	1.4	1.8	2.7	139	31	25	28	10.5	1.9	1.0	1.0
4	1.0	1.4	1.9	2.7	153	30	23	24	9.6	1.8	1.0	1.0
5	1.0	1.4	1.8	2.7	96	28	22	22	9.2	1.6	1.0	1.0
6	1.0	1.4	1.8	2.4	81	26	22	19.5	8.8	1.6	1.0	1.0
7	1.0	1.4	2.2	2.4	67	25	20	18	13.5	1.4	1.0	1.0
8	1.0	1.4	1.9	*2.2	51	24	19.5	15.5	13.5	1.3	1.0	1.0
9	1.0	1.4	1.8	d18	41	24	18.5	14	14	1.2	1.0	1.0
10	1.0	1.4	3.1	10.5	33	27	17	12	13.5	1.2	1.0	.8
11	1.0	1.4	2.7	d12	27	32	16.5	10.5	12.5	1.0	1.0	.8
12	1.0	1.4	2.2	d16.5	22	27	16.5	9.2	14.5	1.0	.8	.7
13	1.0	1.4	2.0	d27	19.5	24	16.5	8.4	16	1.0	.8	.8
14	1.0	1.6	1.9	32	18	21	16	8.0	15.5	1.0	.8	.8
15	1.0	1.4	1.8	23	d18	19.5	*15.5	7.7	14.5	1.0	.8	.8
16	*1.0	1.3	1.6	27	d19	19	17	7.0	13	1.0	1.0	.8
17	1.0	1.3	1.4	165	d18	17	67	6.3	11	1.0	1.0	.8
18	1.0	1.2	1.4	167	d17	17	72	6.3	9.2	1.0	1.0	.8
19	1.0	1.2	1.3	*103	d16	19	59	12	8.0	1.0	*.9	.8
20	1.0	*1.1	1.4	72	d15.5	28	53	16	6.6	1.0	*.8	.8
21	1.0	1.0	1.4	56	15	29	47	*15	5.7	1.0	.8	a.8
22	1.0	1.0	1.4	60	15	37	41	13	5.1	1.0	.8	a.8
23	1.0	1.0	1.3	109	14.5	57	36	13	4.5	1.0	.8	a.8
24	1.0	1.0	1.2	64	14.5	130	29	13	*4.2	1.0	1.3	a.8
25	1.2	b.9	1.2	46	14.5	165	26	12	3.6	1.0	1.2	a.8
26	1.2	b.9	1.3	34	14	96	24	11.5	3.4	1.0	1.3	a.8
27	1.2	b.9	1.2	*29	d20	70	31	11	3.1	1.0	1.2	a.8
28	1.3	b.9	1.3	33	d36	61	56	10.5	2.8	1.0	1.3	a1.0
29	1.3	1.0	1.6	43	-	52	52	11	2.7	.8	1.4	a.9
30	1.4	1.6	2.0	56	-	43	47	11.5	2.4	*.8	1.2	a.9
31	1.4	-	2.0	72	-	40	-	11	-	.8	1.0	-
Total	33.0	37.7	52.6	1,294.4	1,151.5	1,285.5	968.0	449.9	274.4	36.3	31.2	26.1
Mean	1.06	1.26	1.70	41.8	41.1	41.5	32.3	14.5	9.15	1.17	1.01	0.870
Cfsm	0.062	0.074	0.100	2.46	2.42	2.44	1.90	0.853	0.538	0.069	0.059	0.051
In.	0.07	0.08	0.12	2.83	2.52	2.81	2.12	0.98	0.60	0.08	0.07	0.06
Ac-ft	65	75	104	2,570	2,280	2,550	1,920	892	544	72	62	52

Calendar year 1952: Max 192 Min 0.7 Mean 12.5 Cfsm 0.735 In. 9.96 Ac-ft 9,050
Water year 1952-53: Max 167 Min 0.7 Mean 15.5 Cfsm 0.912 In. 12.34 Ac-ft 11,190

Peak discharge (base, 200 cfs).--Jan. 18 (4 p.m.) 248 cfs (42.15 ft); Feb. 3 (3:30 p.m.) 253 cfs (42.13 ft); Mar. 25 (1 p.m.) 248 cfs (42.12 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge estimated from partly reconstructed gage-height graph and records for nearby streams.

Mill Creek at Walla Walla, Wash.

Location.--Lat 46°04'40", long. 118°17'00", in NE¼ sec. 22, T. 7 N., R. 36 E., on left bank at bridge, 0.9 mile downstream from diversion dam and 1.0 mile east of Walla Walla.

Drainage area.--96 sq mi (revised), approximately.

Records available.--April 1941 to September 1953.

Gage.--Water-stage recorder with artificial control. Altitude of gage is 1,120 ft (from topographic map). Prior to June 11, 1941, staff gage and June 11, 1941 to Nov. 6, 1947, water-stage recorder, at approximately same site at different datum.

Extremes.--Maximum discharge during year, 1,630 cfs Jan. 18 (gage height, 4.73 ft); minimum, 1.8 cfs Oct. 1, 4.

1941-53: Maximum discharge, 2,760 cfs Dec. 28, 1945; maximum gage height, 5.04 ft Jan. 22, 1950, from high-water mark on outside gage; minimum discharge, 0.5 cfs May 10, 1947, July 23, 24, 1949, Aug. 12, 13, 1952.

Remarks.--Records good. Some regulation at diversion dam, 0.9 mile above station where water is diverted into Yellowhawk and Garrison Creeks for stock and irrigation. Possible diversions at high stages into flood-control reservoir. City of Walla Walla diverts water for municipal supply. Other small diversions above station for irrigation.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 22				Jan. 23 to Sept. 30			
1.9	1.3	3.5	415	2.0	3.6	3.0	204
2.0	3.6	4.0	800	2.2	14	3.3	340
2.2	14	4.5	1,330	2.4	36	3.6	510
2.5	47	4.8	1,730	2.7	102	4.0	810
3.0	174						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.3	3.4	4.4	4.0	552	152	189	281	94	18.5	4.0	6.4
2	2.6	3.4	4.4	4.0	438	139	159	229	94	14.5	4.0	6.0
3	3.6	3.0	4.4	4.0	722	120	132	193	89	14.5	4.0	5.5
4	2.3	3.0	4.0	4.0	882	108	120	163	86	15.5	4.4	5.5
5	2.6	3.0	4.4	4.0	601	99	123	152	84	15.5	4.4	5.5
6	3.0	2.8	6.0	4.0	462	94	92	156	86	12.0	4.4	5.1
7	2.6	2.8	6.4	4.0	385	92	58	170	97	8.4	4.0	5.1
8	2.8	3.0	6.4	3.6	330	94	58	149	86	7.9	4.4	5.1
9	2.8	3.4	5.1	47	250	108	49	129	84	8.4	5.5	4.7
10	2.8	3.4	5.5	80	181	123	45	117	89	7.9	5.5	5.5
11	2.8	3.6	5.5	90	156	123	43	89	81	6.9	5.5	6.4
12	3.0	4.0	4.7	112	120	126	45	69	94	6.4	5.5	6.0
13	3.4	3.6	4.7	104	97	*156	43	69	123	6.4	6.0	6.0
14	3.4	3.6	5.1	65	94	139	41	74	114	7.4	6.4	6.0
15	3.4	3.6	5.1	49	89	132	36	74	99	7.9	5.1	5.5
16	*3.0	3.6	5.5	60	86	132	*41	67	84	7.4	5.5	5.5
17	3.4	3.6	5.5	849	94	126	142	69	72	6.9	5.5	6.0
18	3.4	3.6	5.1	*1,320	89	120	220	69	65	5.5	4.7	6.0
19	3.4	3.6	5.1	*990	86	139	204	105	63	5.1	5.1	6.0
20	3.0	3.6	5.1	428	84	170	208	*123	58	4.7	5.1	6.4
21	3.0	*3.6	5.1	373	72	177	220	142	52	4.4	*4.7	6.4
22	4.7	4.0	4.7	291	79	208	237	132	38	4.4	4.4	6.4
23	3.0	4.4	4.7	778	72	272	237	123	*29	4.4	5.5	6.9
24	2.8	4.4	4.7	552	65	504	212	126	28	4.4	6.4	6.4
25	2.8	4.0	4.4	375	58	828	200	120	29	4.4	6.4	6.0
26	3.4	4.0	4.0	263	52	559	212	111	22	4.4	7.9	6.4
27	3.0	4.0	4.0	*163	47	380	233	108	20	4.4	6.9	6.9
28	3.4	4.0	3.6	181	114	305	450	92	21	4.4	8.4	9.0
29	3.0	4.0	3.6	233	-	268	390	99	22	4.4	6.9	7.4
30	3.4	4.0	4.0	315	-	237	340	102	20	4.4	7.4	7.4
31	3.4	-	4.0	340	-	220	-	99	-	*4.4	8.4	-
Total	95.5	108.0	149.2	8,089.6	6,357	6,450	4,779	3,801	2,023	236.1	172.3	183.4
Mean	3.08	3.60	4.81	261	227	208	159	123	67.4	7.62	5.56	6.11
Ac-ft	189	214	296	16,050	12,610	12,790	9,480	7,540	4,010	468	342	364

Calendar year 1952: Max 614 Min 0.8 Mean 63.4 Ac-ft 46,040
Water year 1952-53: Max 1,320 Min 2.3 Mean 88.9 Ac-ft 64,350

* Discharge measurement made on this day.

Dry Creek near Walla Walla, Wash.

Location.--Lat 46°07'20", long. 118°14'10", on south line SW¼ sec. 31, T. 8 N., R. 37 E., on right bank 1 mile downstream from Spring Creek and 6 miles northeast (revised) of Walla Walla.

Drainage area.--48.4 sq mi.

Records available.--January 1949 to September 1953.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 1,200 ft (from topographic map).

Extremes.--Maximum discharge recorded during year, 552 cfs Jan. 31 (gage height, 5.93 ft), but may have been more during period of doubtful gage-height record; minimum, 0.6 cfs Aug. 20.
1949-53: Maximum discharge, 3,340 cfs Feb. 22, 1949 (gage height, 11.6 ft, from high-water mark in well), by contracted-opening method at bridge 100 ft downstream from gage; minimum, 0.2 cfs Aug. 4, 1949.

Remarks.--Records good except those for periods of doubtful gage-height record, which are poor. Several small diversions above station for irrigation. No regulation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

3.0	0.3	3.6	22
3.1	1.4	4.0	64
3.2	3.0	4.5	145
3.3	5.7	5.0	257
3.4	10		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	2.6	6.1	4.4	96	52	37	60	21	4.2	1.0	1.6
2	1.8	2.6	6.9	4.7	70	45	32	50	19.5	3.9	.8	1.5
3	1.5	2.8	6.9	4.7	d194	41	29	43	17.5	3.6	1.1	1.4
4	1.6	2.8	6.5	5.0	159	38	26	38	17	3.4	1.4	1.4
5	1.6	2.8	6.1	5.0	103	34	26	34	15.5	3.2	1.5	1.2
6	1.8	2.8	5.3	5.0	112	32	26	33	16	2.8	1.4	1.1
7	2.0	2.6	5.3	*5.0	82	31	26	32	25	2.8	1.2	1.1
8	2.0	2.6	5.3	4.7	67	33	26	28	23	2.4	1.0	.8
9	2.0	2.8	5.0	d36	53	39	23	24	22	2.4	1.1	1.1
10	2.0	2.8	5.0	d16	44	43	22	21	21	2.2	1.1	1.0
11	2.1	2.8	5.0	d13	38	41	22	19	19.5	2.0	1.1	.8
12	2.0	3.0	5.0	d22	32	*38	21	17	34	2.0	1.0	.8
13	2.1	3.4	5.0	d26	28	32	21	16	37	1.8	.8	.8
14	2.1	3.2	5.0	d25	26	28	20	15.5	28	1.8	.8	1.1
15	2.1	3.2	5.0	d24	24	26	*19.5	15	26	2.0	.8	1.0
16	*2.2	3.2	4.7	d23	24	29	21	13.5	22	2.0	1.1	.8
17	2.1	3.2	4.7	d58	24	26	73	12.5	18.5	1.8	1.1	1.2
18	2.0	3.0	4.7	*232	26	26	68	12	15	1.5	.8	1.4
19	1.8	3.0	4.4	116	25	32	57	36	13	1.2	*.8	1.4
20	1.8	*3.2	4.7	95	23	d54	54	21	11.5	1.2	.8	1.4
21	2.1	3.4	4.7	62	22	38	54	*d29	9.0	1.4	.8	1.2
22	2.1	3.4	4.7	d81	21	50	50	26	*8.1	1.2	1.0	1.2
23	2.1	3.4	4.7	111	21	60	49	28	7.3	1.4	1.0	1.2
24	2.1	3.4	4.4	72	20	d116	41	26	6.9	1.4	1.6	1.4
25	2.1	3.9	4.4	60	19.5	225	38	23	6.5	1.5	1.6	1.4
26	2.2	4.2	4.2	42	19.5	78	36	23	5.7	1.4	2.0	1.2
27	2.2	4.7	4.2	*34	19.5	62	d65	22	5.0	1.4	2.1	1.2
28	2.4	5.0	4.2	d64	d68	56	213	20	5.0	1.2	2.1	1.6
29	2.4	5.3	4.2	53	-	51	87	21	4.7	1.2	2.2	1.6
30	2.6	5.7	4.2	64	-	45	74	22	4.7	1.1	2.1	*1.5
31	2.6	-	4.2	81	-	42	-	20	-	*1.1	1.8	-
Total	63.5	100.8	154.7	1,448.5	1,460.5	1,543	1,356.5	800.5	484.9	62.5	39.0	36.4
Mean	2.05	3.36	4.99	46.7	52.2	49.8	45.2	25.8	16.2	2.02	1.26	1.21
Ac-ft	126	200	307	2,870	2,900	3,060	2,690	1,590	962	124	77	72

Calendar year 1952: Max 377 Min 0.7 Mean 18.9 Ac-ft 13,750
Water year 1952-53: Max 232 Min 0.8 Mean 20.7 Ac-ft 14,980

Peak discharge (base, 400 cfs).--Jan. 18 (3 p.m.) discharge unknown; Jan. 31 (11 p.m.) 552 cfs (5.93 ft).
* Discharge measurement made on this day.
d Doubtful gage-height record; discharge computed from reconstructed gage-height graph based on recorder graph, weather records, and records for nearby stations.

Touchet River at Bolles, Wash.

Location.--Lat 46°16'30", long. 118°13'15", on line between secs. 7 and 8, T. 9 N., R. 37 E., on right bank just downstream from bridge on State Highway 3E, a quarter of a mile southeast of Bolles and 3 miles west of Waitsburg.

Drainage area.--362 sq mi.

Records available.--February 1924 to October 1929, April 1951 to September 1953.

Average discharge.--6 years (1924-28, 1951-53), 240 cfs.

Gage.--Water-stage recorder. Altitude of gage is 1,150 ft (from topographic map). Prior to Oct. 5, 1929, water-stage recorder at site half a mile upstream at different datum. Apr. 1 to May 6, 1951, staff gage at present site and datum.

Extremes.--Maximum discharge during year, 2,600 cfs Jan. 18 (gage height, 9.35 ft); minimum, 24 cfs Sept. 16 (gage height, 4.68 ft).
1924-29, 1951-53: Maximum discharge, 4,470 cfs Jan. 13, 1928 (gage height, 7.04 ft, site and datum then in use); minimum, 1.4 cfs July 30, 1926.

Remarks.--Records fair except those for periods of ice effect or indefinite stage-discharge relation, which are poor. Diurnal fluctuation and some regulation at low flow caused by operation of flour mill at Waitsburg. Numerous small diversions for mumicipal and domestic use and for irrigation.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	52	57	b44	68	1,010	435	350	454	268	87	40	42
2	52	57	74	72	852	415	312	386	262	83	37	42
3	52	57	63	78	1,350	390	284	339	246	79	42	42
4	52	57	63	74	1,250	370	268	306	240	79	51	45
5	51	57	64	72	946	351	256	295	235	79	51	45
6	52	57	66	72	935	346	251	312	246	76	45	42
7	51	57	74	*72	781	342	240	339	290	72	45	42
8	51	57	74	72	640	338	246	317	246	68	45	42
9	52	57	70	365	346	351	224	268	246	68	45	42
10	53	57	60	230	342	365	209	230	230	64	48	42
11	55	59	80	192	324	380	*204	214	230	61	42	40
12	55	59	80	385	288	*370	204	214	262	64	42	37
13	55	61	80	390	250	342	204	209	322	57	40	31
14	53	63	72	279	230	324	198	209	256	57	37	34
15	*52	64	74	274	234	315	204	204	246	61	37	28
16	52	63	76	356	223	328	230	209	240	61	40	26
17	53	61	76	1,090	226	328	477	209	214	54	40	28
18	53	61	76	1,500	220	315	525	198	183	54	34	28
19	53	63	74	1,400	206	342	501	278	158	51	*34	28
20	53	*66	78	1,090	230	420	507	*312	148	51	34	31
21	53	64	72	896	250	370	536	398	134	54	31	31
22	53	61	68	1,020	250	390	536	344	*138	51	28	28
23	53	b60	66	1,260	238	495	536	322	129	51	28	31
24	55	b54	64	908	238	802	471	295	125	57	42	31
25	53	b37	b56	715	234	967	432	268	120	51	48	34
26	56	b37	b56	*595	226	713	438	262	112	54	48	37
27	55	b37	63	495	234	519	501	256	107	51	48	40
28	56	b39	63	610	485	477	760	240	107	51	48	48
29	57	b40	64	620	-	443	604	288	107	48	54	57
30	57	b40	74	682	-	410	547	268	94	*42	51	54
31	57	-	72	768	-	398	-	256	-	42	51	-
Total	1,657	1,659	2,156	16,700	13,038	13,151	11,255	8,679	5,941	1,878	1,306	1,128
Mean	53.5	55.3	69.5	539	466	424	375	280	198	60.6	42.1	37.6
Ac-ft	3,290	3,290	4,280	33,120	25,860	26,080	22,320	17,210	11,780	3,720	2,590	2,240

Calendar year 1952: Max 1,900 Min 37 Mean 236 Ac-ft 171,600
Water year 1952-53: Max 1,500 Min 26 Mean 215 Ac-ft 155,800

Peak discharge (base, 2,500 cfs).--Jan. 18 (9:30 p.m.) 2,600 cfs (9.35 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--Indefinite stage-discharge relation Jan. 9 to Mar. 4.

Touchet River near Touchet, Wash.

Location.--Lat 46°05'25", long. 118°39'40", in NE¼ sec. 15, T. 7 N., R. 33 E., on right bank a quarter of a mile upstream from diversion dam, 3½ miles north of Touchet, and 4½ miles upstream from mouth.

Drainage area.--736 sq mi.

Records available.--April 1941 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 490 ft (from topographic map). Prior to July 3, 1941, staff gage at present site and datum.

Average discharge.--12 years, 251 cfs.

Extremes.--Maximum discharge during year, 3,070 cfs Jan. 19 (gage height, 7.64 ft); minimum, 19.5 cfs Aug. 21 (gage height, 0.81 ft).
1941-53: Maximum discharge, 13,300 cfs Feb. 10, 1949 (gage height, 14.7 ft, from high-water mark in gage house), by contracted-opening method at Johnson Bridge, 3 miles upstream; minimum, 6.0 cfs Sept. 11, 1951.

Remarks.--Records good except those for periods of ice effect or doubtful or no gage-height record, which are poor. Many large diversions above station for irrigation of an estimated 3,500 acres. Occasional regulation from unknown source.

Revisions (water years).--WSP 1124: Drainage area. WSP 1154: 1946(M).

Rating tables, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
0.8	17	2.5	218	0.8	19	3.0	345
1.0	29	3.0	335	1.0	31	4.0	650
1.5	68	4.0	630	1.5	75	5.0	1,070
2.0	130	5.0	1,070	2.0	138	6.0	1,670
				2.5	225	8.0	3,430

Note.--Same as following table above 5.0 ft.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	53	b40	70	1,340	600	388	515	229	87	*30	37
2	37	53	b70	70	d1,230	450	352	440	227	84	29	30
3	37	53	b60	75	d1,480	370	325	385	217	82	28	29
4	37	53	b65	79	2,240	340	302	348	205	80	31	29
5	37	53	66	76	1,570	320	282	332	201	80	35	30
6	37	53	67	73	1,430	300	272	338	200	75	33	31
7	37	53	68	72	1,300	300	270	358	231	72	30	28
8	36	53	72	74	1,000	300	278	372	241	71	29	27
9	37	53	70	*178	700	320	265	338	219	68	27	28
10	38	54	72	315	500	340	239	295	209	62	27	29
11	39	54	83	158	400	*350	227	262	196	60	30	27
12	40	57	83	214	350	325	221	235	194	65	26	27
13	40	62	80	383	300	308	223	225	292	60	24	26
14	41	64	79	335	250	280	221	219	252	55	24	23
15	*41	63	74	249	220	260	211	211	227	58	24	25
16	42	64	71	206	220	265	*217	213	219	60	23	23
17	42	62	69	966	220	295	328	217	200	55	23	21
18	43	60	69	*1,440	220	265	536	225	182	52	27	23
19	44	59	67	1,900	210	285	503	262	166	50	24	24
20	44	62	71	1,500	220	358	494	350	161	49	*22	23
21	44	*61	73	1,200	240	355	506	*302	155	47	22	26
22	45	59	70	900	220	355	527	368	135	45	23	27
23	45	56	68	1,000	220	395	527	302	*123	45	22	25
24	45	49	64	1,150	230	604	497	292	118	48	22	26
25	45	33	b56	900	230	1,040	443	278	114	43	32	27
26	46	b33	b49	700	220	845	422	245	108	40	40	29
27	49	b33	b63	550	220	664	446	237	104	38	40	30
28	47	b35	b63	*500	400	559	729	221	100	36	40	32
29	49	b35	68	632	-	506	678	215	102	34	41	37
30	52	b35	70	664	-	449	604	237	90	33	44	44
31	52	-	71	713	-	428	-	227	-	32	40	-
Total	1,305	1,567	2,111	17,342	17,380	12,831	11,533	9,064	5,417	1,766	912	843
Mean	42.1	52.2	68.1	559	621	414	384	292	181	57.0	29.4	28.1
Ac-ft	2,590	3,110	4,190	34,400	34,470	25,450	22,880	17,980	10,740	3,500	1,810	1,670

Calendar year 1952: Max 2,900 Min 24 Mean 212 Ac-ft 153,700
Water year 1952-53: Max 2,240 Min 21 Mean 225 Ac-ft 162,800

Peak discharge (base, 2,000 cfs).--Jan. 19 (12:30 a.m.) 3,070 cfs (7.64 ft); Feb. 1 (6 a.m.) 2,050 cfs (6.51 ft); Feb. 4 (2 a.m.) 2,650 cfs (7.21 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge computed from reconstructed gage-height graph.
Note.--No gage-height record Jan. 19-28, Feb. 7 to Mar. 10, July 1-31; discharge estimated on basis of records for station at Bolles.

Walla Walla River near Touchet, Wash.

Location.--Lat 46°01'45", long. 118°43'40", in NW¼SE¼ sec. 6, T. 6 N., R. 33 E., on left bank 2¾ miles southwest of Touchet, and 3 miles downstream from Touchet River.

Drainage area.--1,660 sq mi, approximately.

Records available.--October 1951 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 405 ft (from topographic map). Prior to Nov. 27, 1951, staff gage at same site and datum.

Extremes.--Maximum discharge during year, 9,850 cfs Jan. 19 (gage height, 10.50 ft); minimum, 11.5 cfs Aug. 23 (gage height, 1.88 ft).

1951-53: Maximum discharge, 16,300 cfs Feb. 2, 1952 (gage height, 12.10 ft), from rating curve extended above 6,000 cfs on basis of contracted-opening determination at gage height 13.81 ft; minimum, that of Aug. 23, 1953.

Maximum stage known, 13.81 ft in February 1949, from floodmarks (discharge, 23,800 cfs).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Some diversions above station for irrigation.

Rating tables, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 8		Jan. 9 to Sept. 30			
2.2	42	1.9	12	5.0	1,170
2.4	72	2.2	38	6.0	1,960
2.7	133	2.5	83	7.0	2,980
3.0	220	3.0	195	8.0	4,340
3.5	400	3.5	355	9.0	6,200
		4.0	580		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	53	88	160	324	2,660	1,260	1,040	1,630	690	78	17.5	31
2	52	96	217	332	2,460	1,160	946	1,330	645	71	16	23
3	52	100	235	336	2,800	1,060	838	1,110	605	68	17.5	20
4	53	100	274	340	4,730	970	754	970	545	64	17	22
5	50	102	296	340	3,440	898	715	898	495	62	18	17.5
6	49	104	296	332	3,050	862	705	922	462	60	22	18
7	52	104	310	332	2,480	832	640	1,010	570	58	17	18
8	52	106	310	336	2,110	826	655	1,020	630	48	18	17
9	53	110	296	*435	1,740	862	645	892	540	44	17.5	17.5
10	53	110	313	850	1,450	922	590	748	515	39	17	16
11	56	115	332	580	1,280	946	565	630	476	37	14.5	17
12	59	122	340	620	1,120	928	555	540	444	30	14.5	17.5
13	58	133	332	874	1,010	*868	545	480	715	25	14	15.5
14	*59	136	324	1,010	958	772	510	423	615	22	14.5	16
15	59	133	310	928	922	705	458	419	530	22	14.5	17
16	58	136	299	808	868	700	448	411	480	25	16	27
17	61	133	299	2,450	898	725	*725	407	419	28	14.5	22
18	61	136	299	*4,560	874	660	1,440	415	341	28	15.5	16
19	59	136	296	*6,040	808	760	1,340	630	302	30	15.5	16
20	64	138	313	2,980	742	976	1,320	1,010	272	22	14.5	15.5
21	67	*146	328	2,460	720	1,060	1,390	796	212	22	*14	16
22	70	144	320	1,910	715	a1,100	1,440	*880	179	23	12.5	17.5
23	69	141	306	3,950	705	a1,200	1,480	736	*145	23	12	21
24	70	141	b285	3,150	680	a1,600	1,370	778	130	19	14	20
25	76	136	b270	2,140	665	a3,500	1,240	705	119	21	15.5	21
26	76	b132	b260	1,710	660	2,730	1,220	670	106	21	24	24
27	77	b130	b270	1,360	675	1,940	1,350	680	96	20	23	29
28	77	b132	299	1,280	1,020	1,640	2,860	640	91	22	25	35
29	81	b138	313	*1,730	-	1,440	2,470	635	92	22	26	41
30	86	141	324	1,780	-	1,270	2,020	685	87	21	30	66
31	86	-	332	1,920	-	1,200	-	655	-	*17	32	-
Total	1,948	3,719	9,158	48,197	42,240	36,372	32,274	23,755	11,548	1,092	553.5	670.0
Mean	62.8	124	295	1,555	1,509	1,173	1,076	766	385	35.2	17.9	22.3
Ac-ft	3,860	7,380	18,160	95,600	83,780	72,140	64,010	47,120	22,910	2,170	1,100	1,330

Calendar year 1952: Max 8,150 Min 17 Mean 577 Ac-ft 419,200
Water year 1952-53: Max 6,040 Min 12 Mean 580 Ac-ft 419,600

Peak discharge (base, 3,000 cfs).--Jan. 18 (4 a.m.) 4,840 cfs; Jan. 19 (2:45 a.m.) 9,850 cfs (10.50 ft); Jan. 23 (6 p.m.) 4,360 cfs; Feb. 1 (11 a.m.) 3,150 cfs; Feb. 4 (time unknown) about 5,200 cfs; Mar. 24 or 25 (time unknown) about 3,700 cfs.

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for stations on nearby streams.

b Stage-discharge relation affected by ice.

Umatilla River above Meacham Creek, near Gibbon, Oreg.

Location.--Lat 45°43', long. 118°20', in SW¼ sec. 21, T. 3 N., R. 36 E., on right bank 0.8 mile downstream from Ryan Creek, 2¼ miles upstream from Meacham Creek, and 2½ miles northeast of Gibbon.

Drainage area.--125 sq mi.

Records available.--April 1933 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 1,854.81 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to June 27, 1939, water-stage recorder at site 1 mile downstream at datum 43.94 ft lower.

Average discharge.--20 years, 224 cfs.

Extremes.--Maximum discharge during year, 2,500 cfs Jan. 18 (gage height, 6.27 ft); minimum, 42 cfs Oct. 27.
1933-53: Maximum discharge, 6,660 cfs Dec. 12, 1946 (gage height, 8.84 ft), from rating curve extended above 2,000 cfs by logarithmic plotting; minimum, 28 cfs Sept. 27, 1935, Jan. 9, 1937.

Remarks.--Records good.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
2.0	43	4.0	620	1.9	40	3.5	395
2.5	93	5.0	1,260	2.0	47	4.0	645
3.0	195	6.0	2,200	2.5	99	5.0	1,310
3.5	385			3.0	200	5.6	1,820

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	46	49	60	1,590	334	386	672	445	126	57	48
2	46	48	53	65	*870	286	334	560	450	122	57	48
3	45	48	53	72	1,760	242	302	500	422	117	57	49
4	45	47	*53	73	1,490	224	278	520	390	112	*57	49
5	45	47	50	*72	904	207	298	601	364	108	58	49
6	45	47	49	70	851	200	322	689	372	104	58	49
7	48	47	52	71	799	197	310	766	445	99	57	49
8	44	47	50	72	656	228	294	656	490	96	57	*50
9	46	47	49	92	500	310	266	550	465	92	57	50
10	47	48	56	113	404	364	252	465	436	87	57	50
11	46	49	56	106	334	368	242	404	418	84	57	50
12	46	50	60	113	282	334	*242	386	450	81	57	50
13	47	53	58	152	252	294	238	395	530	*77	57	50
14	46	54	56	336	232	260	228	418	475	77	57	50
15	46	53	55	276	210	238	210	422	426	76	57	50
16	49	51	54	336	*204	221	221	436	382	74	59	49
17	48	51	53	1,590	218	224	656	445	350	70	58	48
18	47	51	52	*2,090	210	218	748	*475	318	67	58	47
19	46	50	52	1,140	191	235	667	606	286	65	56	46
20	46	51	52	773	176	310	742	606	256	62	55	46
21	*48	50	52	640	165	322	832	525	232	60	54	45
22	48	49	53	525	168	334	825	470	214	59	54	45
23	47	49	51	1,060	158	534	832	431	197	58	53	45
24	47	49	51	724	148	1,260	712	440	176	56	55	45
25	47	48	50	500	151	1,510	689	431	168	57	57	45
26	46	48	51	382	165	806	754	445	156	57	58	45
27	45	47	51	290	197	606	932	470	146	57	59	45
28	45	46	50	270	306	550	*1,530	455	144	57	56	47
29	46	47	52	310	-	475	1,110	455	*141	57	55	48
30	47	47	60	445	-	*431	858	450	133	57	52	49
31	43	-	62	560	-	422	-	426	-	57	49	-
Total	1,432	1,465	1,645	13,378	13,591	12,544	16,310	15,570	9,877	2,428	1,745	1,436
Mean	46.2	48.8	53.1	432	485	405	544	502	329	78.3	56.3	47.9
Cfsm	0.370	0.390	0.425	3.46	3.88	3.24	4.35	4.02	2.63	0.626	0.450	0.383
In.	0.43	0.44	0.49	3.98	4.04	3.73	4.85	4.63	2.94	0.72	0.52	0.43
Ac-ft	2,840	2,910	3,260	26,530	26,960	24,880	32,350	30,880	19,590	4,820	3,460	2,850

Calendar year 1952: Max 1,510 Min 34 Mean 218 Cfsm 1.74 In. 23.80 Ac-ft 158,600
Water year 1952-53: Max 2,090 Min 43 Mean 250 Cfsm 2.00 In. 27.20 Ac-ft 181,300

Peak discharge (base, 1,400 cfs).--Jan. 18 (3:30 p.m.) 2,500 cfs (6.27 ft); Feb. 3 (5 p.m.) 2,490 cfs (6.23 ft); Mar. 25 (2 a.m.) 2,040 cfs (5.82 ft); Apr. 28 (3 to 5 a.m.) 1,760 cfs (5.54 ft).
* Discharge measurement made on this day.

Umatilla River at Pendleton, Oreg.

Location.--Lat 45°40'20", long. 118°47'40", in NE¼ sec. 10, T. 2 N., R. 32 E., on left bank a quarter of a mile upstream from Main Street Bridge at Pendleton and 2½ miles upstream from McKay Creek.

Drainage area.--637 sq mi.

Records available.--February 1891 to July 1892, May 1903 to June 1905, May 1921 to September 1953. Published as "above McKay Creek near Pendleton" May 1921 to September 1934.

Gage.--Water-stage recorder. Datum of gage is 1,062.54 ft above mean sea level, datum of 1929. February 1891 to July 1892, type of gage and location not known. May 22, 1903, to June 11, 1905, staff gage at Main Street Bridge at different datum. May 1 to Oct. 12, 1921, staff gage, and Oct. 13, 1921, to Sept. 30, 1934, water-stage recorders, at two sites 200 ft apart 2½ miles downstream at various datums. Supplementary water-stage recorder at site 600 ft upstream at different datum used for low-water periods since Aug. 1, 1942.

Average discharge.--30 years (1923-53), 482 cfs.

Extremes.--Maximum discharge during year, 6,030 cfs Jan. 19 (gage height, 5.41 ft); minimum, 23 cfs Aug. 19.

1891-92, 1903-5, 1921-53: Maximum discharge, 15,400 cfs Feb. 22, 1949 (gage height, 9.01 ft); minimum, 7 cfs Aug. 14, 1924.

Maximum flood known, 17,000 cfs Dec. 14, 1882 (date and discharge from data furnished by Corps of Engineers). Flood of May 30-31, 1906, reached a stage of 11.0 ft, present site and datum, but before channel was improved (discharge, 15,500 cfs, estimated by Corps of Engineers).

Remarks.--Records good. Diversions for irrigation of about 1,100 acres above station; no regulation.

Revisions (water years).--WSP 934: 1931 (maximum gage height only).

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	57	63	103	2,460	926	1,260	1,650	840	198	41	44
2	38	57	63	103	2,260	835	1,080	1,330	830	178	41	41
3	39	57	*68	111	3,400	740	955	1,110	791	170	42	41
4	38	57	72	114	*4,580	653	870	1,030	728	158	44	39
5	38	57	75	117	2,870	590	911	1,140	647	150	44	35
6	38	57	72	*117	2,560	558	1,020	1,300	638	*132	44	33
7	39	59	72	117	2,410	542	977	1,440	800	118	42	32
8	40	59	72	124	2,160	590	911	1,250	870	110	41	33
9	39	59	72	141	1,690	791	840	1,000	880	104	39	30
10	42	59	75	187	1,280	974	782	840	955	99	37	30
11	45	59	85	195	1,040	986	*746	719	890	93	41	33
12	42	61	88	211	813	926	746	638	890	86	37	32
13	42	65	85	295	*710	813	737	647	1,120	*79	33	30
14	44	70	82	576	617	700	746	683	1,010	79	33	32
15	45	68	80	655	558	635	728	*701	890	77	33	32
16	45	65	78	*566	518	582	773	710	791	73	33	28
17	45	65	78	*2,510	566	550	2,020	737	674	73	*35	32
18	45	65	78	4,560	558	526	2,680	737	596	68	33	33
19	45	65	78	*4,330	526	582	2,360	860	533	66	28	32
20	42	63	82	2,390	489	846	2,380	988	477	64	25	30
21	*42	65	85	1,960	475	926	2,560	860	414	*60	27	32
22	45	63	85	1,440	482	1,060	2,420	773	370	58	32	33
23	47	61	88	2,020	475	1,410	2,400	728	328	54	32	35
24	47	61	80	2,000	*461	2,860	2,070	746	298	54	37	37
25	49	61	78	1,490	447	4,730	1,900	746	*280	54	*46	39
26	49	61	78	1,210	461	*2,980	1,950	850	260	52	50	39
27	51	61	78	*974	526	2,190	2,100	922	240	50	54	39
28	51	61	78	857	760	2,000	3,600	911	230	*52	52	39
29	51	61	80	938	-	1,730	2,760	880	*218	52	54	39
30	57	61	105	1,110	-	1,490	*2,140	870	210	48	52	41
31	59	-	103	1,310	-	1,420	-	820	-	44	48	-
Total	1,375	1,840	2,456	32,831	36,152	37,141	47,422	28,616	18,698	2,753	1,230	1,045
Mean	44.4	61.3	79.2	1,059	1,291	1,198	1,581	923	623	88.8	39.7	34.8
Ac-ft	2,730	3,650	4,870	65,120	71,710	73,670	94,060	56,760	37,090	5,460	2,440	2,070

Calendar year 1952: Max 3,490 Min 28 Mean 428 Ac-ft 310,600
Water year 1952-53: Max 4,730 Min 25 Mean 580 Ac-ft 419,600

Peak discharge (base, 3,200 cfs).--Jan. 19 (3 a.m.) 6,030 cfs (5.41 ft); Feb. 4 (2 a.m.) 5,500 cfs (5.20 ft); Mar. 25 (8 a.m.) 5,460 cfs (5.16 ft); Apr. 28 (10 a.m.) 4,000 cfs (4.47 ft).

* Discharge measurement made on this day.

McKay Creek near Pilot Rock, Oreg.

Location.--Lat 45°33'10", long. 118°46'20", in NE¼ sec. 23, T. 1 N., R. 32 E., on left bank 400 ft downstream from highway bridge, three-quarters of a mile upstream from maximum flow line (altitude, 1,322 ft) of McKay Reservoir, and 6 miles northeast of Pilot Rock.

Drainage area.--178 sq mi.

Records available.--May to August 1921, October 1926 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 1,335.68 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 7 to Aug. 14, 1921, staff gage near present site at different datum. Nov. 19, 1926, to Sept. 15, 1932, and Sept. 16, 1932, to Apr. 8, 1941, water-stage recorder at site 400 ft upstream at datums 1.4 and 4.4 ft higher, respectively.

Average discharge.--25 years (1926-27, 1929-53), 97.4 cfs.

Extremes.--Maximum discharge during year, 2,450 cfs Mar. 24 (gage height, 5.44 ft); minimum, 0.2 cfs Oct. 6-8.
1921, 1926-53: Maximum discharge, 6,000 cfs Apr. 1, 1931 (gage height, 10.4 ft, site and datum then in use), from rating curve extended above 220 cfs by logarithmic plotting; no flow at times.

Remarks.--Records good except those below 75 cfs, which are poor. Diversions for irrigation above station; no diversions between station and McKay Reservoir.

Rating tables, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 27				Apr. 28 to Sept. 30			
1.1	0.1	2.0	55	1.0	0.2	2.0	78
1.2	.7	2.2	92	1.1	.9	2.2	116
1.3	2.3	2.5	170	1.2	2.8	2.5	190
1.4	5.0	3.0	355	1.3	6.5	3.0	360
1.5	9.0	3.5	610	1.5	18	3.5	610
1.6	14	4.0	960	1.7	36	4.0	960
1.8	30	5.0	1,890				

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	1.0	3.6	22	391	302	310	364	171	16	2.1	0.8
2	.4	1.0	4.5	23	364	278	263	306	153	14	1.5	.7
3	.4	1.0	6.0	29	1,220	263	235	259	134	14	1.3	.7
4	.3	1.0	*7.0	34	1,190	242	214	230	120	13	*1.3	.7
5	.3	1.0	6.6	32	761	221	232	*205	*110	11	1.3	.7
6	.2	1.2	6.6	*30	852	228	238	185	108	*9.2	1.3	.6
7	.2	b1.3	7.0	26	719	249	218	185	168	8.7	1.2	.7
8	.2	b1.5	6.6	26	622	278	204	176	236	7.6	1.2	.6
9	.3	b1.7	6.6	34	450	324	*197	150	302	5.8	1.0	.7
10	.4	1.8	6.6	48	324	332	197	131	313	5.4	1.2	.6
11	.4	1.8	6.6	41	252	298	194	114	265	5.4	1.0	.7
12	.5	2.1	7.0	42	*207	263	194	100	246	5.0	1.0	.6
13	.5	2.3	7.8	48	179	228	191	89	296	5.0	1.0	.6
14	.6	2.6	8.6	140	155	197	185	80	259	5.0	.8	.6
15	.7	2.6	9.5	158	135	176	176	*65	223	5.0	.8	.6
16	.7	2.8	9.5	*132	120	155	188	49	199	*4.6	.7	.6
17	.7	2.8	9.5	*282	132	138	768	46	168	4.6	.7	.6
18	.7	2.8	9.0	1,110	132	130	880	46	*143	4.6	.5	.5
19	.8	2.8	9.0	*705	128	146	705	68	123	4.6	.5	.5
20	.7	2.8	9.5	440	128	266	640	83	106	4.3	.5	.4
21	.7	b2.5	9.0	324	125	282	592	72	91	4.6	.5	.4
22	.7	b2.5	10	283	135	524	530	76	78	4.6	.5	.4
23	.7	b2	10	400	132	856	*495	83	68	4.6	.4	.4
24	.7	b2	9.0	314	*128	1,570	415	131	58	4.6	.5	.4
25	.7	b2	7.8	252	125	1,690	360	153	*52	3.9	.6	.4
26	.8	b2	8.2	204	125	*912	332	214	48	3.9	.8	.4
27	.8	b2	9.5	167	138	652	373	262	40	4.3	*.9	.3
28	.8	b2	9.5	161	246	562	928	230	27	3.9	1.0	.3
29	.9	b2.5	10	242	-	455	592	205	*20	3.5	1.2	.3
30	.9	b3	15	256	-	391	455	179	17	2.8	1.0	.3
31	1.0	-	22	242	-	368	-	166	-	2.3	.8	-
Total	18.1	60.4	267.2	6,247	9,615	12,976	11,501	4,702	4,342	195.8	29.1	16.1
Mean	0.58	2.01	8.62	202	343	419	383	152	145	6.32	0.94	0.54
Ac-ft	36	120	530	12,390	19,070	25,740	22,810	9,330	8,610	388	58	32

Calendar year 1952: Max 984 Min 0.2 Mean 69.8 Ac-ft 50,690
Water year 1952-53: Max 1,690 Min 0.2 Mean 137 Ac-ft 99,110

Peak discharge (base, 700 cfs).--Jan. 18 (5 p.m.) 1,830 cfs (4.94 ft); Feb. 3 (7 p.m.) 1,910 cfs (5.02 ft); Mar. 24 (11:30 p.m.) 2,450 cfs (5.44 ft); Apr. 17 (6:30 p.m.) 1,040 cfs (4.10 ft); Apr. 28 (2 a.m.) 1,440 cfs (4.55 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

McKay Reservoir near Pendleton, Oreg.

Location.--Lat 45°36', long. 118°48', in SE¼ sec. 34, T. 2 N., R. 32 E., near right end of McKay Dam, 4 miles south of Pendleton.

Drainage area.--186 sq mi.

Records available.--October 1930 to September 1953 in reports of Geological Survey. December 1927 to September 1941 in reports of State engineer.

Gage.--Staff gage. Datum of gage is at mean sea level, adjustment of 1924 (Bureau of Reclamation benchmark). For datum of 1929, supplementary adjustment of 1947, add 0.16 ft.

Extremes.--Maximum contents observed during year, 73,080 acre-ft June 24 (elevation 1,321.4 ft); minimum observed, 9,140 acre-ft, Oct. 31, Nov. 7, 14, 21, 28 (elevation, 1,235.3 ft). 1930-53: Maximum contents, 73,840 acre-ft June 9, 1950 (elevation, 1,322.0 ft); minimum observed, 3,050 acre-ft Oct. 1, Nov. 1, Dec. 1, 1935 (elevation, 1,217.6 ft).

Remarks.--Reservoir is formed by gravel-fill dam with concrete facing completed in 1926; storage began in 1927. Usable capacity, 73,830 acre-ft, between elevations 1,182 ft (floor of trash-rack structure) and 1,322 ft (top of spillway gates). Dead storage about 6 acre-ft, included in contents given herein. Water is used for irrigation of lands along Umatilla River near Echo, Stanfield, and Hermiston.

Cooperation.--Gage readings and capacity table furnished by Bureau of Reclamation.

Revisions.--WSP 1154: Drainage area.

Monthly elevation and contents, water year October 1952 to September 1953

Date	Elevation (feet)	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30.....	1,236.1	9,460	-
Oct. 31.....	1,235.3	9,140	-320
Nov. 30.....	1,235.4	9,180	+40
Dec. 31.....	1,237.1	9,860	+680
Calendar year.....	-	-	-8,970
Jan. 31.....	1,263.2	22,700	+12,840
Feb. 28.....	1,289.6	40,800	+18,100
Mar. 31.....	1,314.9	65,290	+24,490
Apr. 30.....	1,319.8	71,060	+5,770
May 31.....	1,320.4	71,820	+760
June 30.....	1,320.4	71,820	0
July 31.....	1,301.0	50,770	-21,050
Aug. 31.....	1,272.5	28,440	-22,330
Sept.30.....	1,246.2	13,780	-14,660
Water year 1952-53...	-	-	+4,320

McKay Creek near Pendleton, Oreg.

Location.--Lat 45°36'40", long. 118°48'00", in SE¼NW¼ sec. 34, T. 2 N., R. 32 E., on right bank at irrigation diversion dam, a quarter of a mile downstream from McKay Dam and 4 miles south of Pendleton.

Drainage area.--186 sq mi.

Records available.--November 1918 to September 1923, October 1924 to September 1953 (diversions by irrigation canal at gage not included since 1932).

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,163.71 ft above mean sea level (Bureau of Reclamation benchmark). Prior to Apr. 15, 1919, staff gage at site 2 miles upstream at different datum. Apr. 3, 1919, to Sept. 30, 1923, staff gage at site about a quarter of a mile upstream at different datum. Oct. 1, 1924, to Jan. 14, 1927, staff gage, and Mar. 23, 1928, to Nov. 15, 1948, water-stage recorder, at site 30 ft downstream at same datum. Jan. 15, 1927, to Mar. 22, 1928, water-stage recorder at site 250 ft upstream at different datum.

Average discharge.--27 years (1919-23, 1924-27, 1928-43, 1948-53), 94.2 cfs (unadjusted).

Extremes.--Maximum discharge during year, 646 cfs Apr. 29 (gage height, 1.92 ft); no flow Dec. 4 to Feb. 5, but about 2 cfs diverted during this period.
1918-53: Maximum discharge observed, 3,250 cfs Feb. 10, 1921 (gage height, 4.4 ft, site and datum then in use), from rating curve extended above 1,200 cfs; no flow at times.

Remarks.--Records good except those below 10 cfs, which are poor. Diversions above station for irrigation. Also one diversion around station during irrigation season which may amount to about 10 cfs. At times during winter entire flow, seepage only, is diverted as stock water, not included in records presented. Flow completely regulated since 1927 by McKay Reservoir (see preceding page).

Revisions.--WSP 1154: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.0	0	0.7	91
.1	3	1.0	175
.3	25	1.5	380
.5	52	1.9	630

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3	3	3		0	3	8	484	129	218	350	226
2	3	3	3		0	3	8	365	146	*242	350	182
3	3	3	1		0	3	8	254	105	242	350	182
4	2	2	0		0	3	8	108	89	242	350	182
5	2	2	0		0	3	8	*48	*89	242	355	210
6	2	2	0		1	3	80	35	89	262	355	282
7	2	3	0		2	3	146	124	159	290	306	282
8	2	3	0		2	3	175	203	214	314	218	282
9	2	3	0		2	3	*306	140	318	*310	340	278
10	2	3	0		2	3	326	68	360	322	*340	278
11	2	3	0		2	3	200	40	262	330	340	278
12	2	3	0		2	3	80	26	126	330	360	274
13	2	3	0		2	3	85	22	222	330	355	274
14	3	4	0		2	3	162	21	242	340	355	274
15	3	5	0		2	3	274	21	226	350	370	270
16	2	5	0		2	3	310	21	131	*345	380	278
17	2	5	0		2	3	472	21	70	345	390	310
18	2	5	0		2	3	546	21	*40	345	390	306
19	2	5	0		2	3	525	32	23	345	390	306
20	2	5	0		2	3	525	36	23	345	385	302
21	3	5	0		2	3	539	25	23	355	385	302
22	3	5	0		2	4	581	36	22	375	380	*262
23	2	5	0		2	3	*574	57	22	375	370	178
24	2	4	0		*2	4	432	131	56	*375	365	178
25	3	4	0		2	4	175	159	*78	375	360	175
26	3	4	0		2	6	129	274	93	375	360	175
27	3	3	0		2	7	135	306	137	375	*350	175
28	3	3	0		3	6	433	258	156	370	322	*162
29	3	3	0		-	6	623	153	*156	360	290	149
30	3	3	0		-	7	616	108	169	350	290	100
31	3	-	0		-	7	-	101	-	350	*290	-
Total	74	109	7	0	46	117	8,489	3,698	3,975	10,124	10,791	7,112
Mean	2.4	3.6	0.2	0	1.6	3.8	283	119	132	327	348	237
Ac-ft	147	216	14	0	91	232	16,840	7,330	7,880	20,080	21,400	14,110

Calendar year 1952: Max 365 Min 0 Mean 76.6 Ac-ft 55,580
Water year 1952-53: Max 623 Min 0 Mean 122 Ac-ft 88,340

* Discharge measurement made on this day.

Birch Creek at Rieth, Oreg.

Location.--Lat 45°39'10", long. 118°52'40", in SE¼ sec. 13, T. 2 N., R. 31 E., on right bank 300 ft downstream from highway bridge, a quarter of a mile upstream from mouth, and half a mile southwest of Rieth.

Drainage area.--291 sq mi.

Records available.--May 1921 to September 1923, April 1927 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 951.82 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 1, 1921, to Sept. 30, 1923, staff gages near present site at different datums. Apr. 4, 1927, to Jan. 29, 1928, water-stage recorder, and Feb. 3, 1928, to Dec. 16, 1931, staff gage, at site 300 ft upstream at different datum. Dec. 17, 1931, to Dec. 29, 1939, water-stage recorder at present site at datum 0.86 ft higher.

Average discharge.--24 years (1929-53), 45.3 cfs.

Extremes.--Maximum discharge during year, 756 cfs Mar. 25 (gage height, 4.34 ft), from rating curve extended above 350 cfs; no flow at times.
1921-23, 1927-53: Maximum discharge, 1,860 cfs June 17, 1950 (gage height, 7.2 ft); from rating curve extended above 400 cfs; no flow at times.

Remarks.--Records good except those for periods of ice effect or no gage-height record and those for periods of shifting control, which are fair. Diversions for irrigation of about 4,000 acres above station.

Revisions (water years).--WSP 984: 1939.

Rating table, water year 1952-53, except periods of ice effect or shifting control (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from moss Oct. 1-23, Sept. 5-30)

0.2	0.1	1.0	24
.3	.4	1.2	40
.4	1.0	1.5	75
.5	2.2	2.0	154
.6	4.2	2.5	250
.7	7.0	3.0	375
.8	11	4.1	690

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	1.9	b8	17	66	100	193	270	112	4.4	0	0.1
2	.1	2.1	b9	18	76	95	178	220	101	3.1	0	.1
3	0	2.2	*9.4	17	123	95	161	189	90	1.8	0	.1
4	0	5.5	11	18	226	92	149	189	74	1.8	0	.1
5	.1	5.8	10	18	202	86	149	199	*65	2.4	0	.1
6	.3	5.8	9.8	*17	193	75	161	204	81	*2.5	0	.1
7	.1	6.1	9.4	16	176	79	159	204	92	1.9	0	.1
8	.2	6.1	11	15	176	95	154	193	92	.6	0	.1
9	.1	5.8	11	15	a160	130	*151	156	96	.4	0	.1
10	0	5.8	11	19	a140	158	139	125	114	.4	0	.1
11	0	5.8	11	20	125	163	125	107	110	.2	0	.1
12	0	6.1	11	20	*109	154	118	92	106	.2	0	.1
13	0	17	12	20	96	140	114	83	123	.2	0	.1
14	0	13	12	24	88	125	104	78	117	.2	0	.1
15	0	11	11	28	81	112	95	*76	104	.2	0	.1
16	0	9.0	12	28	72	104	92	71	94	.1	0	.1
17	0	6.4	13	*31	75	98	154	67	81	.1	0	.1
18	0	5.8	13	136	70	89	242	66	70	.1	0	.1
19	.1	6.1	13	*234	65	95	290	88	65	.1	0	.1
20	.2	7.4	15	195	57	128	352	123	60	.1	0	.1
21	.1	8.6	15	197	60	114	485	115	55	.1	0	a.1
22	.3	9.0	16	165	61	144	465	115	45	.1	0	a.1
23	.3	b8.5	15	144	58	248	558	122	38	.1	0	.1
24	1.8	a8	13	130	56	486	486	147	31	.1	0	.1
25	.9	a7.5	b12	117	58	672	415	146	*25	.1	*0	.1
26	1.5	b7	b11	101	63	492	430	158	18	.1	.1	.1
27	1.9	b7	b11	89	68	345	459	156	33	.1	.1	a.1
28	2.1	b7	b12	*78	83	310	606	149	12	.1	.1	a.1
29	1.7	b7	13	70	-	268	438	140	9.4	.1	.1	a.1
30	1.7	b7.5	15	65	-	212	*342	132	a7	.1	.1	.1
31	1.8	-	16	62	-	214	-	122	-	.1	.1	-
Total	15.3	211.8	371.6	2,124	2,883	5,718	7,944	4,302	2,118.4	21.9	0.6	3.0
Mean	0.49	7.06	12.0	68.5	103	184	265	139	70.6	0.71	0.02	0.10
Ac-ft	30	420	737	4,210	5,720	11,340	15,760	8,530	4,200	43	1.2	6.0

Calendar year 1952: Max 474 Min 0 Mean 37.3 Ac-ft 27,050
Water year 1952-53: Max 672 Min 0 Mean 70.4 Ac-ft 51,000

Peak discharge (base, 300 cfs).--Jan. 18 (11:30 p.m.) 310 cfs (2.84 ft); Mar. 25 (4 a.m.) 756 cfs (4.34 ft); Apr. 28 (6 a.m.) 693 cfs (4.13 ft).

* Discharge measurement or observation of no flow made on this day.

a No gage-height record; discharge estimated on basis of records for Butter Creek near Pine City and McKay Creek near Pilot Rock.

b Stage-discharge relation affected by ice.

Note.--Shifting-control method used Jan. 18-21.

Umatilla River at Yoakum, Oreg.

Location.--Lat 45°40'40", long. 119°02'00", in SW¼ sec. 2, T. 2 N., R. 30 E., at left bank on downstream side of highway bridge, half a mile northeast of Yoakum station and 2½ miles downstream from abandoned Furnish Reservoir.

Drainage area.--1,280 sq mi, approximately.

Records available.--May 1903 to September 1953. Published as "above Furnish Reservoir" August 1916 to September 1934.

Gage.--Water-stage recorder. Datum of gage is 768.21 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 5, 1903, to Aug. 15, 1916, staff gage at site 500 ft upstream at different datum. June 18 to Aug. 28, 1915, staff gage, and July 5, 1916, to Sept. 30, 1934, water-stage recorder, at site 5 miles upstream at different datum. Oct. 1, 1934, to Oct. 20, 1948, water-stage recorder at present site at datum 2.0 ft higher.

Average discharge.--50 years, 676 cfs.

Extremes.--Maximum discharge during year, 7,460 cfs Jan. 19 (gage height, 9.25 ft); minimum, 40 cfs Oct. 1 (gage height, 1.60 ft).
1903-53: Maximum discharge, 20,000 cfs May 30, 1906 (gage height, about 15.0 ft, datum then in use, from floodmarks), from rating curve extended above 6,600 cfs on basis of records for station near Umatilla; minimum, 12 cfs Aug. 10-12, 1908, Aug. 4, 1910.

Remarks.--Records good. Diversions above station for irrigation. Slight regulation by Furnish Reservoir, 1910-16. Flow regulated to some extent since 1927 by McKay Reservoir (see p. 26).

Revisions (water years).--WSP 794: 1906(M).

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 19				Jan. 20 to Sept. 30			
1.6	40	4.0	930	2.2	190	5.0	1,760
1.8	62	5.0	1,680	2.5	280	6.0	2,750
2.0	95	6.0	2,650	3.0	470	7.0	3,930
2.3	161	6.5	3,220	3.5	710	8.2	5,640
2.6	248	7.0	3,850	4.0	1,000		
3.0	400	8.1	5,460				

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	61	77	126	2,480	1,040	1,490	2,630	1,150	410	394	294
2	42	61	77	126	2,510	988	1,290	2,100	1,150	430	386	*223
3	42	62	81	133	3,300	898	1,150	1,730	1,070	426	386	217
4	42	62	88	137	5,240	808	1,050	1,460	958	418	390	214
5	42	64	93	139	3,310	745	1,050	1,450	880	406	390	211
6	42	64	93	137	2,880	700	1,200	1,570	832	410	390	294
7	43	64	90	*137	2,650	680	1,290	1,760	1,070	414	386	298
8	*43	64	91	147	2,440	710	1,240	1,760	1,210	434	256	298
9	43	66	91	144	1,930	*892	1,270	1,450	1,320	434	358	298
10	44	66	*95	184	1,490	1,110	1,270	1,160	1,490	434	374	290
11	48	65	101	202	1,210	1,180	*1,120	958	1,370	438	374	294
12	48	66	103	210	994	1,130	958	814	1,160	434	390	294
13	47	86	103	255	862	1,010	910	784	1,490	426	390	290
14	47	86	101	474	755	892	970	802	1,440	422	386	287
15	48	79	99	680	695	796	1,050	*820	1,320	438	386	287
16	48	77	97	570	645	740	1,120	820	1,100	430	394	277
17	49	76	97	1,910	670	705	2,250	850	916	430	418	315
18	49	72	95	*4,790	680	655	3,660	844	784	426	418	318
19	51	74	93	5,460	645	740	3,200	946	680	422	406	318
20	51	74	101	2,870	605	1,050	3,280	1,230	620	418	398	315
21	49	76	105	2,360	590	1,130	3,560	1,060	540	418	398	315
22	49	77	109	1,750	580	1,270	3,510	976	478	438	402	312
23	51	76	109	2,260	580	1,660	3,500	940	422	438	402	217
24	52	76	101	2,360	555	3,280	3,080	1,060	*402	*434	390	208
25	54	76	95	1,730	*550	5,510	2,560	1,080	410	430	*394	208
26	55	76	95	1,360	565	3,570	2,510	1,360	382	430	410	205
27	56	76	95	*1,090	615	*2,580	2,640	1,460	422	426	410	211
28	57	76	93	922	802	2,270	4,660	1,430	418	426	394	*211
29	57	76	95	1,010	-	2,000	4,070	1,290	410	422	346	190
30	60	77	124	1,160	-	1,720	*3,260	1,210	386	402	336	190
31	61	-	126	1,340	-	1,630	-	1,100	-	398	329	-
Total	1,511	2,151	3,013	36,173	40,828	44,089	64,168	38,904	26,280	13,162	11,881	7,899
Mean	48.7	71.7	97.2	1,167	1,458	1,422	2,139	1,255	876	425	383	263
Ac-ft	3,000	4,270	5,980	71,750	80,980	87,450	127,300	77,160	52,130	26,110	23,570	15,670

Calendar year 1952: Max 4,380 Min 39 Mean 563 Ac-ft 409,000
Water year 1952-53: Max 5,510 Min 41 Mean 795 Ac-ft 575,400

Peak discharge (base, 3,600 cfs).--Jan. 19 (6 a.m.) 7,460 cfs (9.25 ft); Feb. 4 (6:30 a.m.) 5,940 cfs (8.39 ft); Mar. 25 (9 a.m.) 6,710 cfs (8.84 ft); Apr. 18 (7 a.m.) 3,800 cfs (6.90 ft); Apr. 28 (2 p.m.) 5,240 cfs (7.94 ft).
* Discharge measurement made on this day.

Butter Creek near Pine City, Oreg.
(Called North Fork Butter Creek on some maps)

Location.--Lat 45°32'40", long. 119°18'40", in SW¼ sec. 22, T. 1 N., R. 28 E., on right bank half a mile below Mattlock Canyon, 6 miles southeast of settlement of Pine City, and 20 miles south of Hermiston.

Drainage area.--291 sq mi.

Records available.--October 1945 to September 1953 in reports of Geological Survey. April 1928 to September 1941 in reports of State engineer and October 1941 to September 1945 in files of State engineer.

Gage.--Water-stage recorder. Altitude of gage is 1,400 ft (by barometer). Apr. 10, 1928, to Sept. 30, 1944, at datum 1.1 ft higher and Oct. 1, 1944, to Sept. 6, 1949, at datum 1.0 ft higher.

Average discharge.--21 years (1929-30, 1931-32, 1933-41, 1942-53), 22.6 cfs.

Extremes.--Maximum discharge during year, 802 cfs Mar. 25 (gage height, 5.32 ft); minimum, 0.4 cfs Aug. 21, 23.
1928-53: Maximum gage height, 12.4 ft Feb. 21, 1949, present datum (discharge not determined); no flow at times.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No regulation. A few small diversions for irrigation above station. Water is diverted into headwaters of Butter Creek from Fivemile Creek, a tributary of Camas Creek in John Day River basin, for irrigation of 345 acres below station; at times almost 40 cfs is diverted.

Revisions (water years).--WSP 1218: 1950(M).

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 24				Mar. 25 to Sept. 30			
0.8	0.6	1.5	26	0.8	0.4	1.5	19
.9	1.6	2.0	70	.9	.9	2.0	54
1.0	3.3	2.5	130	1.0	1.9	2.5	120
1.1	6.0	3.0	209	1.1	3.3	3.0	206
1.3	15	3.5	305	1.2	5.5	4.0	415
				1.3	8.5	4.6	575

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.9	3.1	3.7	8.5	32	50	114	98	44	*9.5	0.9	1.4
2	1.0	3.1	4.0	8.0	36	41	100	86	*40	8.2	.9	1.2
3	1.0	3.3	4.0	8.5	65	46	90	76	37	7.3	.8	1.1
4	1.0	3.3	4.0	9	112	41	84	72	34	6.4	.8	1.0
5	1.0	3.5	4.0	9.5	89	38	85	74	34	5.8	*.8	1.0
6	1.1	4.0	4.0	10	93	36	84	*76	32	5.3	1.0	1.0
7	1.1	4.0	4.0	10	91	52	77	85	35	4.8	1.0	.9
8	1.2	4.3	4.3	11	84	71	82	35	4.0	1.0	.9	
9	1.5	4.0	*4.3	13	69	102	64	74	31	3.7	1.0	.9
10	1.5	4.0	4.5	15	59	85	60	63	29	3.0	.9	.8
11	1.7	4.3	4.5	20	*53	71	*55	55	26	2.2	.8	.8
12	2.3	4.6	4.5	25	46	64	53	49	26	1.9	.8	.7
13	2.2	4.8	4.5	30	41	59	52	45	29	1.8	.6	.6
14	2.0	5.1	5	*33	38	50	49	44	27	1.6	.6	.6
15	2.2	4.8	5	29	35	46	45	42	24	1.8	.6	.5
16	2.2	4.8	5.5	24	32	43	46	44	21	*1.6	.5	.5
17	2.5	4.8	6	27	35	46	58	44	*19	1.6	.5	.5
18	2.5	4.8	6	120	35	46	71	45	17	1.5	.6	.5
19	2.5	*4.8	6.5	*184	31	48	75	56	16	1.3	.5	.5
20	2.5	4.8	7	125	26	59	85	80	16	1.2	.5	.5
21	2.5	4.8	8	127	27	62	*100	71	15	1.2	.5	.5
22	2.5	4.8	9	90	30	70	104	62	14	1.1	.5	.6
23	2.5	3.7	10	*73	28	105	115	57	12	1.9	.5	.6
24	2.5	3.7	9.5	63	26	280	115	68	12	.9	.7	.6
25	2.5	3.7	9	55	*26	574	107	60	12	.7	.7	.7
26	2.5	3.7	8	47	28	303	109	62	12	.8	.8	.8
27	2.7	3.7	8	40	30	221	130	62	10	.8	*.8	.8
28	2.7	3.7	8	34	42	192	177	56	10	.7	1.3	.8
29	2.9	3.7	8	31	-	160	150	52	10	.8	1.6	.8
30	3.1	3.7	8.5	29	-	136	122	49	10	.8	1.9	.9
31	3.1	-	*9.2	27	-	130	-	46	-	.9	1.8	-
Total	63.4	123.4	190.5	1,335.5	1,339	3,340	2,647	1,935	689	84.2	26.0	23.0
Mean	2.05	4.11	6.15	43.1	47.8	108	88.2	62.4	23.0	2.72	0.84	0.77
Ac-ft	126	245	378	2,650	2,660	6,620	5,250	3,840	1,370	167	52	46

Calendar year 1952: Max 231 Min 0.5 Mean 20.6 Ac-ft 14,940
Water year 1952-53: Max 574 Min 0.5 Mean 32.3 Ac-ft 23,400

Peak discharge (base, 200 cfs).--Jan. 19 (1:30 a.m.) 254 cfs (3.25 ft); Mar. 25 (3 a.m.) 802 cfs (5.32 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Dec. 10-30, Jan. 1, 3-13, 22, 27; discharge estimated on basis of weather records, recorded range in stage, and records for Birch Creek at Rieth and McKay Creek near Pilot Rock.

Umatilla River near Umatilla, Oreg.

Location.--Lat 45°54'20", long. 119°20'00", in NW¼ sec. 21, T. 5 N., R. 28 E., on left bank 1½ miles downstream from West Division main canal of Umatilla project and 2 miles upstream from Umatilla and mouth of river.

Drainage area.--2,290 sq mi, approximately.

Records available.--October 1903 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 330.57 ft above mean sea level, datum of 1929. Prior to Jan. 26, 1931, staff gage at same site and datum.

Average discharge.--50 years, 507 cfs.

Extremes.--Maximum discharge during year, 5,500 cfs Feb. 4 (gage height, 6.15 ft); minimum, 4.9 cfs Nov. 8.
1903-53: Maximum discharge, 19,600 cfs May 31, 1906 (gage height, 11.0 ft), from rating curve extended above 11,000 cfs by logarithmic plotting; no flow at times.

Remarks.--Records good. Many diversions above station for irrigation; Brownell Canal diverts below station. Flow regulated by McKay and Cold Springs Reservoirs (Cold Springs Reservoir is an off-channel reservoir).

Revisions.--WSP 794: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.9	6.5	2.7	135
2.0	9.5	3.0	270
2.1	14	3.5	620
2.2	21	4.0	1,170
2.3	32	5.0	3,010
2.4	48	5.9	4,950
2.5	70		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	9.5	124	128	1,870	854	992	2,380	760	14	46	85
2	14	9.5	124	128	2,800	898	800	1,760	*740	16	42	100
3	14	10	124	128	2,800	810	647	1,270	692	18	*59	97
4	14	13	128	128	4,930	730	510	956	572	23	43	94
5	14	8.2	124	128	4,160	665	416	790	502	35	63	85
6	14	7.0	124	128	3,180	588	510	810	395	25	59	79
7	14	6.8	124	124	2,900	548	629	968	525	18	63	82
8	14	64	121	121	2,700	556	604	1,200	750	15	73	73
9	14	135	*121	135	2,280	674	629	956	810	13	68	76
10	14	135	124	128	1,690	*865	701	674	920	17	70	68
11	14	135	128	135	1,320	1,050	564	525	898	17	48	73
12	14	135	128	163	1,040	1,040	451	336	692	12	38	68
13	13	135	128	318	898	876	376	230	800	15	35	57
14	13	135	128	395	730	692	*369	175	909	*11	38	63
15	13	135	128	720	629	548	416	211	800	9.5	g32	66
16	48	135	124	638	564	465	423	202	638	9.2	g48	59
17	66	132	121	828	532	451	759	188	409	9.5	g48	66
18	59	132	121	3,510	580	388	2,880	202	276	9.5	g48	66
19	57	132	121	4,840	556	318	2,600	220	167	8.2	g48	76
20	91	132	128	3,260	510	526	2,500	437	91	13	g48	76
21	*193	132	128	2,480	488	730	2,740	465	52	18	g48	79
22	188	128	132	1,900	465	770	2,820	388	24	22	g48	73
23	167	128	135	1,820	458	1,230	*2,840	330	11	38	g70	73
24	155	128	135	2,460	451	2,360	2,700	451	13	45	g100	73
25	92	128	135	1,860	430	4,310	2,040	572	11	45	*82	94
26	33	128	132	1,380	416	4,000	1,750	780	11	55	97	85
27	20	128	128	1,040	437	2,380	1,880	1,130	10	63	118	68
28	19	124	128	*832	510	2,040	3,050	1,130	8.2	50	121	76
29	16	124	128	832	-	1,780	3,810	1,020	11	73	151	70
30	13	124	128	944	-	1,360	3,050	932	13	37	139	66
31	11	-	128	1,140	-	1,160	-	810	-	50	118	-
Total	1,435	3,008.0	3,930	32,771	40,324	35,662	44,456	22,498	12,510.2	803.9	2,109	2,266
Mean	46.3	100	127	1,057	1,440	1,150	1,482	726	417	25.9	68.0	75.5
Ac-ft	2,850	5,970	7,800	65,000	79,980	70,730	88,180	44,620	24,810	1,590	4,180	4,490

Calendar year 1952: Max 3,600 Min 6.8 Mean 369 Ac-ft 267,700
Water year 1952-53: Max 4,930 Min 6.8 Mean 553 Ac-ft 400,200

Peak discharge (base, 2,800 cfs).--Jan. 19 (6 p.m.) 5,480 cfs (6.14 ft); Feb. 4 (9:30 p.m.) 5,500 cfs (6.15 ft); Mar. 25 (8:30 p.m.) 5,020 cfs (5.93 ft); Apr. 18 (1 p.m.) 3,050 cfs (5.02 ft); Apr. 29 (3 a.m.) 4,110 cfs (5.52 ft).

* Discharge measurement made on this day.
g Computed from once-daily telemark readings.

Principal diversions from Umatilla River between Pendleton and Umatilla, Oreg.

The following canals divert water from Umatilla River between Pendleton and Umatilla: Furnish Canal, from right bank of Umatilla River in sec. 36, T. 3 N., R. 29 E. Umatilla project feed canal, from right bank of Umatilla River in SW¼ sec. 22, T. 3 N., R. 29 E., to feed Cold Springs Reservoir of Bureau of Reclamation. Western Land Canal, from left bank of Umatilla River in NE¼ sec. 21, T. 3 N., R. 29 E.; gage is 1 mile downstream from intake. Allen Canal, from right bank of Western Land Canal, half a mile downstream from headgate of that canal. Maxwell Canal, from right bank of Umatilla River in SW¼ sec. 28, T. 4 N., R. 28 E.; at times it receives water from Cold Springs Reservoir. West Division main canal, from left bank of Umatilla River in SW¼ sec. 28, T. 5 N., R. 28 E.

Water diverted by all of these canals is used for irrigation of lands on both sides of Umatilla River near and below Echo; except that diverted by West Division main canal, which is applied to land along Columbia River in vicinity of Irrigon.

Several smaller canals also divert water between Pendleton and Umatilla, but no records for them were obtained.

Records of monthly discharge of the canals, published as a group, are available from March 1926 to September 1953; records for some of the canals published separately prior to 1926.

Diversions, in acre-feet, water year October 1952 to September 1953

Month	Furnish Canal	Umatilla project feed canal	Western Land Canal	Allen Canal	Maxwell Canal	West Division main canal
October	0	841	833	630	857	6,280
November	0	3,670	-	-	0	1,650
December	0	5,200	-	-	0	0
January	0	8,940	-	-	0	0
February	0	11,780	-	-	0	0
March	738	13,360	4,360	-	2,790	4,190
April	7,640	13,920	11,790	883	5,310	10,320
May	7,550	12,970	15,090	729	5,640	12,140
June	7,370	7,700	13,630	817	4,810	11,400
July	8,880	0	15,150	778	2,930	12,520
August	8,360	0	13,940	714	2,700	12,260
September	3,550	0	11,090	652	2,180	10,740
Water year 1952-53	44,090	78,380	-	-	27,220	81,500

Note.--No gage-height record for months of little or no flow and for a few days and short periods at other times. Discharge for some periods interpolated or computed on basis of information furnished by watermaster.

Willow Creek at Heppner, Oreg.

Location.--Lat 45°21', long. 119°32', in SE¼ sec. 35, T. 2 S., R. 26 E., on right bank, 100 ft upstream from Court Street bridge, 800 ft southeast of Morrow County courthouse, and a third of a mile downstream from Balm Fork.

Drainage area.--87 sq mi, approximately.

Records available.--May 1951 to September 1953.

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,952.73 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 359 cfs Mar. 25 (gage height, 4.17 ft); no flow for several days in October.
1951-53: Maximum discharge, that of Mar. 25, 1953; no flow at times.
Maximum discharge known, about 36,000 cfs June 14, 1903, by slope-area method.

Remarks.--Records good except those for periods of ice effect, backwater from aquatic growth, or shifting control, which are fair. Many diversions above station for irrigation of about 500 acres. Part of flow of Ditch Creek, in John Day River basin, is diverted to Willow Creek above station.

Rating tables, water year 1952-53, except periods of ice effect, backwater from aquatic growth, or shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 24				Mar. 25 to Sept. 30			
0.77	0	1.4	17	0.76	0	1.3	14
.8	.3	1.8	37	.8	.3	1.8	41
.9	1.6	2.2	66	.9	1.7	2.4	91
1.0	3.6	2.6	104	1.0	3.7	3.0	159
1.1	6.0	3.0	150	1.1	6.5	4.1	319
1.2	9.0	3.5	219				

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	0.8	b4.2	6.3	24	39	83	71	51	7.9	0.5	1.0
2	.1	1.3	b4.2	6.6	25	38	74	61	*45	6.2	.5	.9
3	.1	1.4	3.1	7.5	46	36	67	53	42	5.0	.6	1.1
4	0	1.3	3.4	7.5	76	36	61	48	39	2.0	.5	.6
5	0	1.3	3.6	6.9	69	34	57	48	37	1.6	.7	.9
6	0	1.3	3.6	6.9	*74	32	57	54	42	2.0	.7	.9
7	.3	1.4	4.1	6.6	79	34	56	64	45	1.5	.7	.7
8	.3	1.6	4.3	6.3	77	39	53	61	42	1.1	.5	.5
9	.1	2.3	*4.1	9.8	63	46	50	53	42	1.3	.4	.5
10	0	2.3	4.5	13	52	*52	48	45	41	1.5	.6	.4
11	0	2.3	4.7	12	44	53	44	40	39	.4	.6	.3
12	0	2.5	5.0	13	36	49	43	37	36	.3	.4	.3
13	.1	3.4	5.4	15	33	43	41	33	37	.3	.3	.3
14	.3	3.6	5.0	17	30	38	40	29	33	.3	.2	.3
15	.3	3.1	4.7	15	28	35	39	26	31	*.3	.2	.3
16	.5	2.5	4.7	14	26	33	37	26	29	.3	.1	.3
17	.5	2.9	4.7	17	28	33	39	26	26	.5	.1	.3
18	.4	3.6	4.5	74	28	30	43	26	25	.4	.1	.3
19	.4	3.8	4.3	*94	26	32	47	40	24	.4	.1	.3
20	.4	4.3	4.5	64	26	39	56	50	23	.5	.2	.3
21	.4	4.7	4.5	53	26	41	*70	47	21	.7	.1	.1
22	*.3	b4.0	4.7	41	28	52	82	44	18	.6	.1	.1
23	.5	b3.6	4.1	37	27	98	82	44	16	.6	.2	.1
24	.6	b3.4	3.8	35	25	219	77	54	16	.6	.4	.1
25	.8	b3.6	b3.6	31	26	307	71	69	14	.6	.4	.1
26	1.0	b3.6	b4.2	28	26	211	73	100	14	.6	.4	.1
27	.8	b3.6	b4.0	26	28	160	92	93	12	1.0	*.4	.1
28	.8	b3.8	b4.6	*23	35	135	113	82	6.5	1.0	.5	.2
29	.8	b3.8	b5.5	23	-	119	100	72	8.6	.9	1.1	.1
30	.8	b4.0	b6.0	22	-	104	86	62	9.3	.7	.7	.3
31	.8	-	6.6	22	-	93	-	55	-	.7	.9	-
Total	11.5	85.1	138.2	753.4	1,111	2,310	1,881	1,613	864.4	41.8	13.2	11.8
Mean	0.37	2.84	4.46	24.3	39.7	74.5	62.7	52.0	28.8	1.35	0.43	0.39
Ac-ft	23	169	274	1,490	2,200	4,580	3,730	3,200	1,710	83	26	23

Calendar year 1952: Max 150 Min 0 Mean 13.4 Ac-ft 9,760
Water year 1952-53: Max 307 Min 0 Mean 24.2 Ac-ft 17,510

Peak discharge (base, 75 cfs).--Jan. 19 (4 a.m.) 120 cfs (2.75 ft); Feb. 7 (3 a.m. to 1 p.m.) 80 cfs (2.35 ft); Mar. 25 (4 a.m.) 359 cfs (4.17 ft); Apr. 28 (4 a.m.) 139 cfs (2.73 ft); May 26 (10 a.m. to 1 p.m.) 105 cfs (2.54 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Backwater from aquatic growth July 4 to Aug. 28. Shifting-control method used Mar. 22 to May 19.

Prairie power canal at Prairie City, Oreg.

Location.--Lat 44°27', long. 118°42', in sec. 11, T. 13 S., R. 33 E., on left bank just upstream from highway bridge over canal and 1 mile south of Prairie City.

Records available.--May 1925 to September 1953 (discontinued).

Gage.--Staff gage read once daily. Datum of gage is 3,602.43 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--1925-53: Maximum daily discharge, 86 cfs May 5, 1939; no flow at times.

Remarks.--Records fair. Canal diverts from John Day River in SE¼ sec. 7, T. 13 S., R. 34 E. Until powerplant was destroyed by fire on Feb. 2, 1952, water was used by power-plant at Prairie City and returned to river below station on John Day River at Prairie City. Water used only for irrigation after that date.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.4	6.4	1.4	3.5	3.0	1.0	1.5	1.3	12	28	10	22
2	6.8	6.4	1.4	3.5	3.2	1.0	1.3	1.3	12	29	10	9.7
3	6.8	5.4	1.1	3.5	5.6	.7	1.3	1.3	19	29	11	9.7
4	6.8	4.6	1.1	3.5	*6.4	.7	1.1	5.2	27	30	11	5.4
5	6.0	1.8	1.1	3.5	5.4	.7	.9	14	24	35	11	5.4
6	4.6	1.8	1.1	3.5	5.4	.7	*.7	15	18	45	10	5.4
7	3.4	1.8	1.5	3.5	5.4	.7	.7	14	18	22	9.7	5.1
8	1.8	1.6	1.7	4.9	5.4	.7	.7	14	19	20	9.7	5.1
9	1.8	1.6	1.9	6.2	5.1	.5	.7	8.6	40	26	9.7	4.4
10	2.0	1.6	1.9	6.2	5.1	.5	.7	8.6	17	26	9.7	4.4
11	2.0	1.6	2.1	5.8	4.8	.5	.7	8.1	22	26	9.7	4.4
12	1.8	1.6	2.1	*4.8	4.8	.5	.7	8.1	28	29	9.7	4.4
13	*2.3	1.8	2.1	3.8	4.8	.5	.7	8.1	28	30	10	5.4
14	2.3	1.8	2.1	3.8	4.8	.5	.7	8.6	28	30	10	6.2
15	2.5	2.0	2.1	3.5	4.8	.5	.7	8.6	29	22	9.7	7.0
16	2.5	2.0	1.9	3.5	4.4	.5	.2	8.6	30	21	9.2	7.0
17	2.5	1.8	1.9	3.2	4.4	.5	.2	9.0	30	21	9.7	7.0
18	2.5	*1.6	1.9	3.2	4.1	.5	.2	9.0	30	15	*5.3	7.0
19	3.1	1.6	1.9	3.0	4.1	.5	.2	45	*34	9.7	.6	5.4
20	3.7	1.6	1.9	3.0	4.1	.5	.2	26	34	6.6	.6	5.4
21	4.6	1.8	1.9	3.0	3.0	.5	3.8	8.8	30	10	14	5.4
22	4.6	1.8	1.9	2.7	2.5	.5	3.8	7.4	22	10	32	5.4
23	5.6	1.8	1.9	2.7	2.0	2.1	3.8	7.4	22	11	32	6.2
24	6.0	1.6	2.1	2.4	1.5	2.4	4.1	7.9	22	11	33	7.4
25	6.0	1.6	2.1	2.4	*1.0	2.1	4.1	7.9	21	11	33	7.4
26	6.0	1.6	2.7	2.4	1.0	1.9	4.1	7.9	20	11	33	7.4
27	6.4	1.6	3.5	3.0	1.0	1.9	3.8	9.2	20	11	32	12
28	6.4	1.6	3.5	3.0	1.0	1.9	3.8	9.2	20	11	32	12
29	6.4	1.6	3.5	3.2	-	1.9	1.3	9.2	26	*9.7	32	13
30	6.4	1.6	3.5	3.0	-	1.9	1.3	12	28	9.7	22	12
31	6.4	-	3.5	3.0	-	1.8	-	12	-	10	22	-
Total	136.4	67.0	64.3	110.2	108.1	31.1	48.0	321.3	730	615.7	493.3	224.0
Mean	4.40	2.23	2.07	3.55	3.86	1.00	1.60	10.4	24.3	19.9	15.9	7.47
Ac-ft	271	133	128	219	214	62	95	637	1,450	1,220	978	444

Calendar year 1952: Max 79 Min - Mean 18.0 Ac-ft 13,100
Water year 1952-53: Max 45 Min 0.2 Mean 8.08 Ac-ft 5,850

* Discharge measurement made on this day.

Strawberry Creek above Slide Creek, near Prairie City, Oreg.

Location.--Lat 44°20', long. 118°39', in SW¼ sec. 20, T. 14 S., R. 34 E., on left bank 100 ft upstream from Slide Creek and 8½ miles south of Prairie City.

Drainage area.--7.2 sq mi, approximately.

Records available.--October 1930 to September 1953.

Gage.--Water-stage recorder and log control. Datum of gage is 4,909.57 ft above mean sea level, datum of 1929.

Average discharge.--23 years, 12.4 cfs.

Extremes.--Maximum discharge during year, 96 cfs July 8 (gage height, 2.08 ft); minimum, 1.4 cfs Dec. 2-7.
1930-53: Maximum discharge, 172 cfs June 8, 1948; maximum gage height, 2.44 ft June 9, 1933; minimum discharge, 1.4 cfs for several days in 1931, 1934-35, 1937, Nov. 19, 1939, and Dec. 2-7, 1952.

Remarks.--Records excellent except those for July and August and those below 3 cfs, which are good. No diversion above station; some natural regulation by Strawberry Lake.

Rating table, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	0.6	1.5	18
1.2	3.0	1.7	35
1.3	6.6	1.9	62
1.4	12	2.1	100

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.4	2.2	1.7	1.7	3.7	2.2	2.7	22	36	75	18	7.9
2	3.4	2.2	1.4	1.7	4.0	2.2	2.7	21	42	75	17	7.4
3	3.0	2.2	1.4	1.7	5.1	1.9	2.7	20	45	76	17	7.4
4	3.0	2.2	1.4	1.7	5.4	1.9	2.7	20	47	82	16	7.0
5	3.0	2.2	1.4	1.7	5.1	1.9	3.0	22	48	84	16	7.0
6	3.0	2.2	1.4	1.7	5.1	1.9	*3.0	26	52	88	15	7.0
7	3.0	1.9	1.4	1.7	5.1	1.9	3.0	29	58	92	14	6.6
8	3.0	1.9	1.7	2.2	4.8	1.9	3.0	28	64	94	14	6.6
9	3.0	1.9	1.7	2.7	4.8	1.9	3.0	26	62	88	14	6.2
10	3.0	1.9	1.7	2.4	4.8	1.9	3.0	25	59	80	14	6.2
11	2.7	1.9	1.7	2.4	4.8	1.9	3.0	24	62	78	13	5.8
12	2.7	1.9	1.9	*3.7	4.4	1.9	2.7	*24	71	76	13	5.8
13	*2.7	1.9	1.9	4.8	4.4	1.9	2.7	25	76	75	13	5.4
14	2.7	1.9	1.9	4.0	4.4	1.9	2.7	26	78	71	12	5.4
15	2.7	1.7	1.9	3.7	4.4	1.9	2.7	26	80	66	12	*5.4
16	2.7	1.7	1.9	3.7	4.0	1.9	2.7	28	82	58	12	5.1
17	2.7	1.9	1.9	4.0	4.0	1.9	2.7	31	80	52	11	5.1
18	2.7	*1.9	1.7	4.8	4.0	1.9	3.0	37	84	46	10	5.1
19	2.7	1.9	1.7	4.4	3.7	1.9	3.4	54	*84	42	10	4.8
20	2.7	1.7	1.7	4.4	b3.7	1.9	4.0	62	76	37	10	4.8
21	2.7	b1.7	1.7	4.0	b3.7	1.9	5.8	66	73	33	10	a4.6
22	2.4	b1.7	1.7	4.0	3.7	1.9	8.4	60	75	31	9.9	a4.6
23	2.4	b1.7	b1.7	4.0	3.4	1.9	13	58	76	28	9.9	a4.4
24	2.4	1.7	b1.7	4.0	b3.4	2.2	14	52	78	26	9.9	a4.4
25	2.4	b1.7	b1.7	4.0	*b2.8	2.2	15	46	76	24	9.4	a4.4
26	2.4	b1.7	2.2	3.7	2.4	2.4	19	42	73	23	9.4	a4.4
27	2.4	b1.7	1.9	3.7	2.2	2.4	33	37	73	22	9.4	a4.4
28	2.4	b1.7	1.7	3.7	2.2	2.4	35	33	73	21	8.9	a4.6
29	2.4	b1.7	1.7	3.7	-	2.4	28	32	75	20	8.9	a4.6
30	2.4	b1.7	1.7	3.7	-	2.7	24	33	75	*18	8.4	a4.6
31	2.4	-	1.7	3.7	-	2.7	-	34	-	18	8.4	-
Total	84.5	56.2	52.8	101.3	113.5	63.7	253.6	1,069	2,033	1,699	373.5	167.0
Mean	2.73	1.87	1.70	3.27	4.05	2.05	8.45	34.5	67.8	54.8	12.0	5.57
Ac-ft	168	111	105	201	225	126	503	2,120	4,030	3,370	741	331

Calendar year 1952: Max 102 Min 1.4 Mean 15.6 Ac-ft 11,340
Water year 1952-53: Max 94 Min 1.4 Mean 16.6 Ac-ft 12,030

Peak discharge (base, 50 cfs).--May 21 (4 a.m.) 67 cfs (1.93 ft); July 8 (6 p.m.) 96 cfs (2.08 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for John Day River at Prairie City.
b Stage-discharge relation affected by ice.

John Day River at Prairie City, Oreg.

Location.--Lat 44°27', long. 118°43', in NE¼ sec. 10, T. 13 S., R. 33 E., on right bank 600 ft upstream from powerplant and outlet of Prairie power canal, one-third of a mile below Dixie Creek, and three-quarters of a mile southwest of Prairie City.

Drainage area.--231 sq mi.

Records available.--October 1916 to September 1917 (gage heights only), March 1925 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 3,496.99 ft above mean sea level, datum of 1929. Prior to Mar. 30, 1926, staff gage at site just below outlet of Prairie power canal at different datum. Mar. 30, 1926, to Aug. 23, 1943, staff gages at various sites and datums about 600 ft below present site, but just above the outlet of Prairie power canal.

Average discharge.--28 years (1925-53), 113 cfs, including flow of Prairie power canal.

Extremes.--Maximum discharge during year, 574 cfs June 13 (gage height, 2.71 ft); minimum, 12 cfs Aug. 24.
1925-53: Maximum discharge, 2,100 cfs Mar. 25, 1952 (gage height, 6.27 ft, from floodmark), from rating curve extended above 450 cfs; minimum, 2 cfs Dec. 8, 21, 22, 1932, Aug. 10, 1934.

Remarks.--Records good. Diversions above station for irrigation. (See p.32 for records for Prairie power canal at Prairie City.)

Rating tables, water year 1952-53 (gage height, in feet, and discharge in cubic feet per second)

Oct. 1 to June 12				June 13 to Sept. 30			
0.6	24	1.8	265	0.5	16	1.5	170
.9	58	2.4	470	.7	33	2.0	310
1.3	130			1.0	72	2.5	490

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	64	82	75	85	98	144	268	340	165	74	52
2	33	66	80	75	132	90	137	244	368	161	72	48
3	37	72	78	75	163	94	132	208	348	149	82	44
4	41	72	78	72	*148	100	132	197	362	152	80	44
5	37	72	76	72	173	107	146	200	337	154	74	44
6	40	76	78	72	178	109	*148	229	330	147	72	44
7	45	76	82	78	181	115	144	250	382	149	66	43
8	60	75	78	98	176	115	135	247	407	152	58	42
9	61	72	76	128	130	115	130	220	446	152	48	40
10	61	75	82	98	126	115	124	202	386	136	43	41
11	64	76	80	88	120	109	115	176	354	122	48	38
12	64	82	80	88	111	107	111	*146	404	113	44	34
13	*62	82	80	*101	111	105	107	126	474	109	37	34
14	67	83	78	101	115	100	103	117	415	105	37	30
15	68	82	78	142	105	98	100	115	401	94	41	27
16	66	80	78	217	103	100	103	111	380	87	32	26
17	64	80	78	148	111	98	128	130	342	84	28	26
18	64	*80	78	126	101	98	128	158	324	84	*25	31
19	64	80	78	111	96	109	139	414	*320	82	21	32
20	64	78	78	107	85	122	163	466	289	80	20	33
21	62	76	75	100	85	117	205	421	265	74	21	41
22	62	62	76	96	98	137	238	362	229	74	18	40
23	64	64	70	90	94	200	286	348	208	69	22	42
24	62	65	65	87	87	232	271	368	210	70	21	41
25	62	64	60	82	*83	200	259	306	200	70	18	42
26	62	60	70	83	94	173	280	289	182	70	35	43
27	62	55	90	82	100	168	372	268	180	65	43	43
28	61	58	76	80	107	173	*438	247	182	65	50	48
29	61	75	78	78	-	163	368	274	195	*68	58	49
30	61	78	85	78	-	158	309	295	175	72	56	48
31	62	-	76	82	-	153	-	306	-	72	56	-
Total	1,775	2,180	2,397	3,010	3,298	3,978	5,595	7,708	9,435	3,246	1,400	1,190
Mean	57.3	72.7	77.3	97.1	118	128	186	249	314	105	45.2	39.7
Ac-ft	3,520	4,320	4,750	5,970	6,540	7,890	11,100	15,290	18,710	6,440	2,780	2,360
Adjusted for diversion by Prairie power canal												
Mean	61.6	74.8	79.4	1101	122	129	188	259	339	125	61.2	47.1
Ac-ft	3,790	4,450	4,880	6,190	6,750	7,950	11,200	15,930	20,160	7,660	3,760	2,800

Observed

Calendar year 1952: Max 1,200 Min 10 Mean 128 Ac-ft 92,630
Water year 1952-53: Max 474 Min 18 Mean 124 Ac-ft 89,670

Adjusted

Calendar year 1952: Mean 146 Ac-ft 105,700
Water year 1952-53: Mean 132 Ac-ft 95,520

* Discharge measurement made on this day.

South Fork John Day River near Dayville, Oreg.

Location.--Lat 44°25'40", long. 119°32'20", in NE¼ sec. 24, T. 13 S., R. 26 E., on left bank 0.7 mile downstream from Smoky Creek and 3 miles south of Dayville.

Drainage area.--590 sq mi, approximately.

Records available.--October 1951 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 2,420 ft (by barometer).

Extremes.--Maximum discharge during year, 2,070 cfs Jan. 18 (gage height, 5.28 ft); minimum, 22 cfs Dec. 24 (gage height, 0.70 ft).
1951-53: Maximum discharge, 3,230 cfs Mar. 25, 1952 (gage height, 6.98 ft), from rating curve extended above 1,900 cfs on basis of slope-area determination of peak flow; minimum, that of Dec. 24, 1952.
Flood in May 1948 reached discharge of 3,250 cfs, from slope-area determination.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating tables, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 9		Jan. 10 to Sept. 30			
0.8	26	0.9	30	3.0	430
1.1	44	1.3	58	3.5	650
1.5	89	1.8	123	4.1	1,000
2.1	190	2.5	272		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	38	38	53	a200	175	402	615	470	153	48	46
2	32	38	42	55	a340	146	384	560	462	144	46	45
3	32	38	41	54	506	157	388	502	420	137	48	43
4	32	37	42	51	486	155	398	474	388	130	52	43
5	32	38	44	49	*482	161	442	466	381	125	53	42
6	32	38	45	48	680	177	474	474	370	120	50	41
7	32	39	49	56	645	187	*454	482	402	110	46	40
8	32	39	49	70	700	200	402	474	434	101	45	39
9	33	38	47	187	412	222	370	442	409	97	43	39
10	33	40	54	194	345	246	354	398	409	94	43	38
11	33	40	55	122	a320	246	333	370	384	93	41	36
12	33	43	54	150	283	239	312	348	364	90	39	35
13	33	47	54	*179	267	229	300	327	434	88	37	34
14	33	49	53	179	256	222	286	321	384	85	36	32
15	34	48	52	135	241	211	275	327	357	81	35	*32
16	*35	47	51	124	215	202	289	324	345	81	34	32
17	35	44	50	283	224	192	364	330	324	79	34	32
18	35	43	49	949	213	187	392	327	*297	73	33	33
19	35	*44	50	550	196	202	406	434	272	69	*33	33
20	35	44	51	462	165	213	478	585	254	67	33	33
21	35	43	50	a400	157	215	590	510	241	64	32	32
22	35	36	49	a340	171	254	690	466	229	62	32	32
23	35	b32	43	a290	171	357	750	462	218	59	32	32
24	35	b30	b28	a250	*159	660	725	690	207	57	34	32
25	36	b32	b34	a220	150	605	660	610	198	55	37	33
26	36	b30	50	a190	163	494	650	595	192	55	45	33
27	36	b32	51	a170	173	474	852	542	183	54	46	33
28	36	b32	46	a160	200	502	1,000	502	175	54	47	33
29	36	b32	51	a160	-	478	*834	482	171	*53	54	35
30	36	b32	56	a160	-	438	700	458	163	51	52	35
31	37	-	50	a180	-	426	-	430	-	49	49	-
Total	1,056	1,163	1,478	6,470	8,520	8,872	14,954	14,327	9,537	2,630	1,289	1,078
Mean	34.1	38.8	47.7	209	304	286	498	462	318	84.8	41.6	35.9
Ac-ft	2,090	2,310	2,930	12,830	16,900	17,600	29,660	28,420	18,920	5,220	2,560	2,140

Calendar year 1952: Max 2,590 Min 28 Mean 263 Ac-ft 190,900
Water year 1952-53: Max 1,000 Min 28 Mean 196 Ac-ft 141,600

Peak discharge (base, 1,000 cfs).--Jan. 18 (8 p.m.) 2,070 cfs (5.28 ft); Feb. 3 (7 p.m.) 1,050 cfs (4.17 ft); Mar. 24 (8 p.m.) 1,090 cfs (4.22 ft); Apr. 28 (4 a.m.) 1,050 cfs (4.17 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby stations.

b Stage-discharge relation affected by ice.

John Day River at Picture Gorge, near Dayville, Oreg.

Location.--Lat 44°31'20", long. 119°37'30", in sec. 20, T. 12 S., R. 26 E., on right bank on John Day Highway, 0.7 mile upstream from Rock Creek bridge and 7 miles northwest of Dayville.

Drainage area.--1,640 sq mi, approximately.

Records available.--April 1926 to September 1953.

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,232.10 ft above mean sea level, datum of 1929. Apr. 5 to Oct. 10, 1926, staff gage and Oct. 11, 1926 to July 25, 1930, water-stage recorder at same site at datum 0.50 ft higher.

Average discharge.--27 years, 445 cfs.

Extremes.--Maximum discharge during year, 3,370 cfs Apr. 28 (gage height, 9.67 ft); minimum, 52 cfs Sept. 17.
1926-53: Maximum discharge, 6,570 cfs Mar. 26, 1952; maximum gage height, 14.0 ft Mar. 19, 1932; minimum discharge, 1 cfs for several days in August and September 1930, Aug. 8, 9, 1936.

Remarks.--Records excellent except those for periods of ice effect or doubtful gage-height record, which are good. Many diversions above station for irrigation.

Revisions (water years).--WSP 794: 1932(M). WSP 1218: 1950.

Rating tables, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 28				Apr. 29 to Sept. 30			
1.6	56	4.0	495	1.6	47	4.0	470
2.0	99	5.0	800	2.0	85	5.0	800
2.5	170	7.0	1,660	2.5	150	7.0	1,680
3.0	260	9.6	3,320	3.0	240	9.3	3,110

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	61	151	183	214	448	622	1,180	2,050	1,700	653	108	174
2	61	156	193	223	478	556	1,110	1,780	1,850	620	103	169
3	61	167	188	221	1,170	568	1,080	1,580	1,780	593	106	152
4	62	176	186	216	1,660	553	1,080	1,450	1,710	566	118	148
5	63	201	189	210	1,400	562	1,140	1,450	1,720	557	135	141
6	65	184	193	207	1,720	583	1,240	1,530	1,640	551	129	131
7	68	186	208	223	1,680	604	*1,210	1,620	1,800	515	129	125
8	70	191	208	262	2,070	631	1,110	1,620	2,080	500	120	116
9	75	196	198	430	1,420	694	1,040	1,480	2,000	468	121	102
10	79	183	201	526	1,140	754	972	1,310	1,940	445	114	96
11	91	183	210	415	1,050	768	916	1,180	1,780	398	109	*86
12	93	186	212	420	928	748	868	1,040	1,740	358	102	82
13	98	201	214	*470	860	724	816	944	2,140	325	88	69
14	107	214	210	526	804	682	764	908	1,990	308	80	60
15	*113	212	207	468	764	670	733	956	1,830	*302	72	*56
16	118	210	205	410	715	640	736	940	1,800	290	d68	54
17	120	203	205	574	727	619	872	972	1,670	280	d68	53
18	133	201	203	1,590	715	604	964	1,040	*1,540	258	d66	53
19	150	*200	201	1,970	658	637	1,020	1,730	1,430	230	d66	54
20	148	196	203	1,440	586	715	1,200	3,050	1,320	210	d62	56
21	139	194	201	1,140	565	709	1,560	2,630	1,190	196	d60	55
22	140	184	200	892	580	745	1,890	2,240	1,080	169	d58	54
23	145	b160	193	751	580	948	2,200	2,070	940	158	d60	54
24	142	b150	b150	673	*529	1,620	2,210	2,440	876	153	d64	58
25	148	b150	b130	616	518	1,860	2,030	2,200	836	144	d68	60
26	146	b150	b160	568	535	1,560	2,020	2,020	780	138	74	60
27	145	b140	191	505	565	1,420	2,560	1,830	716	136	93	68
28	145	b150	208	480	667	1,460	*3,290	1,670	677	132	101	72
29	145	b160	208	470	-	1,430	2,930	1,600	704	122	132	80
30	144	b160	217	452	-	1,320	2,410	1,620	684	118	192	88
31	145	-	223	442	-	1,250	-	1,580	-	107	196	-
Total	3,420	5,395	6,098	18,004	25,532	27,256	43,151	50,530	43,943	10,001	3,062	2,626
Mean	110	180	197	581	912	879	1,438	1,630	1,465	323	98.8	87.5
Ac-ft	6,780	10,700	12,100	35,710	50,640	54,060	85,590	100,200	87,160	19,840	6,070	5,210

Calendar year 1952: **Max** 6,270 **Min** 48 **Mean** 755 **Ac-ft** 547,900
Water year 1952-53: **Max** 3,290 **Min** 53 **Mean** 655 **Ac-ft** 474,100

Peak discharge (base, 1,300 cfs).--Jan. 18 (11:30 p.m.) 3,250 cfs (9.50 ft); Feb. 3 (9 p.m.) 2,060 cfs (7.68 ft); Feb. 8 (1 a.m.) 2,320 cfs (8.11 ft); Mar. 25 (2 a.m.) 2,170 cfs (7.87 ft); Apr. 28 (1:30 p.m.) 3,370 cfs (9.67 ft); May 20 (1 p.m.) 3,170 cfs (9.39 ft); June 13 (9 to 11 a.m.) 2,280 cfs (8.05 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge computed on basis of appearance of recorder graph and records for nearby stations.

Desolation Creek near Dale, Oreg.

Location.--Lat 44°59', long. 118°55', in SE¼ sec. 1, T. 7 S., R. 31 E., on right bank 1 mile upstream from mouth and 2 miles east of Dale.

Drainage area.--106 sq mi.

Records available.--July 1915 to September 1917 (fragmentary, gage heights and discharge measurements only), September 1949 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 2,907.21 ft above mean sea level, datum of 1929. July 1915 to September 1917, at site three-quarters of a mile downstream at different datum. Sept. 14, 1949, to Oct. 12, 1951, water-stage recorder 80 ft downstream at datum 1.97 ft lower.

Extremes.--Maximum discharge during year, 850 cfs May 19 (gage height, 4.80 ft), from rating curve extended above 510 cfs by logarithmic plotting; minimum, 2.6 cfs Nov. 22 (gage height, 0.09 ft), result of freezeup.
1949-53: Maximum discharge, that of May 19, 1953; minimum, that of Nov. 22, 1952.

Remarks.--Records excellent except those above 500 cfs, which are good, and those for periods of ice effect, which are fair. Slight fluctuation at low flow caused by log ponds above station. Records of water temperatures for water year 1953 are given in WSP 1293.

Rating table, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.3	4.0	2.0	74
.6	7.2	2.5	141
.9	12	3.0	237
1.2	22	4.0	540
1.5	37	4.7	810

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.8	7.0	8.8	8.2	43	23	63	279	408	254	29	16
2	6.8	6.6	8.0	8.4	49	b21	56	244	488	251	28	14
3	6.8	5.7	7.2	9.2	139	26	57	228	442	256	28	13
4	6.7	6.6	6.7	9.2	143	22	59	254	426	244	41	13
5	6.6	7.8	7.7	9.0	99	b20	68	307	399	237	33	12
6	6.6	7.7	7.7	9.0	95	22	69	411	432	237	29	12
7	6.6	6.8	8.1	9.1	95	25	63	449	547	237	26	11
8	6.6	6.0	8.1	10	90	30	59	396	477	222	24	11
9	6.6	7.6	8.1	b19	57	35	*57	333	442	195	22	11
10	6.6	10	8.4	20	54	40	53	287	423	176	21	*10
11	6.6	12	8.8	22	59	39	50	256	470	162	20	9.8
12	6.6	11	9.7	27	48	38	51	244	554	148	19	9.6
13	6.7	*11	9.6	38	49	36	51	259	634	133	18	9.2
14	6.6	9.4	9.2	33	45	30	49	*282	558	118	17	9.1
15	6.7	9.2	8.8	*25	37	34	48	290	526	103	16	9.0
16	*6.7	6.9	8.8	22	38	35	59	321	*494	88	15	8.6
17	6.7	7.0	8.5	39	40	32	109	381	474	79	15	8.5
18	6.7	8.6	8.4	90	33	31	107	470	470	72	14	8.5
19	6.7	7.3	8.2	90	29	36	114	786	420	68	*14	8.5
20	6.6	7.7	8.4	83	b20	38	153	706	360	63	14	8.5
21	6.7	7.3	8.2	*67	b25	36	205	622	345	59	13	8.5
22	6.7	5.6	8.2	51	b24	37	254	526	351	54	13	8.4
23	6.6	b5.0	b7.0	48	*b24	48	339	488	345	50	13	8.2
24	6.6	b4.2	b6.0	44	b21	92	315	463	304	47	14	8.2
25	6.6	b4.6	b7.0	39	b22	112	318	399	293	45	16	8.2
26	6.6	b5.5	8.1	31	b26	84	387	378	284	42	23	8.2
27	6.7	b5.0	8.1	26	b27	79	540	348	282	*40	29	8.1
28	6.7	b5.0	8.1	26	28	86	530	330	274	37	20	8.5
29	6.6	b6.0	8.2	25	-	76	396	357	266	35	25	9.6
30	6.7	b8.5	8.6	24	-	70	336	366	261	33	20	9.2
31	6.8	-	8.5	24	-	72	-	378	-	30	18	-
Total	206.6	218.6	253.2	985.1	1,459	1,405	5,015	11,838	12,449	3,815	647	297.4
Mean	6.66	7.29	8.17	31.8	52.1	45.3	167	382	415	123	20.9	9.91
Ac-ft	410	434	502	1,950	2,890	2,790	9,950	23,480	24,690	7,570	1,280	590

Calendar year 1952: Max 752 Min 4.2 Mean 96.1 Ac-ft 69,740
Water year 1952-53: Max 786 Min 4.2 Mean 106 Ac-ft 76,540

Peak discharge (base, 200 cfs).--Feb. 3 (4 p.m.) 242 cfs (3.02 ft); Apr. 27 (10:30 p.m.) 698 cfs (4.42 ft); May 7 (1 a.m.) 466 cfs (3.79 ft); May 19 (9:30 p.m.) 850 cfs (4.80 ft); June 13 (1:30 a.m.) 714 cfs (4.46 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

North Fork John Day River near Dale, Oreg.

Location.--Lat 45°00', long. 118°57', in SE¼ sec. 35, T. 6 S., R. 31 E., on right bank three-eighths of a mile downstream from Desolation Creek and 1½ miles northeast of Dale.

Drainage area.--525 sq mi.

Records available.--October 1929 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 2,775.85 ft above mean sea level, datum of 1929.

Average discharge.--24 years, 386 cfs.

Extremes.--Maximum discharge during year, 4,670 cfs May 19 (gage height, 8.21 ft); minimum daily, 20 cfs Nov. 24.
1929-53: Maximum discharge, 8,170 cfs May 26, 1948 (gage height, 10.48 ft); minimum, 6 cfs Nov. 3, 1936 (gage height, 1.40 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. Log ponds and several small diversions above station for irrigation and mining cause fluctuations at low flow.

Rating tables, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 8		Jan. 9 to Sept. 30			
2.1	40	2.2	55	5.0	1,230
2.4	79	2.5	106	6.0	2,060
2.5	96	3.0	220	7.0	3,110
		3.5	390	7.8	4,110
		4.0	620		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46	54	b50	a50	165	152	326	1,310	2,450	1,060	165	110
2	44	50	b48	a55	180	132	298	1,110	2,930	1,030	161	104
3	44	42	b44	a60	344	158	298	1,030	2,580	1,050	175	96
4	44	47	b46	a60	426	147	298	1,200	2,350	1,020	223	95
5	43	55	b50	a55	370	136	343	1,680	2,100	990	192	93
6	42	58	b55	a55	343	141	382	2,360	2,140	984	170	87
7	43	51	b50	a70	329	147	362	2,710	2,580	960	158	89
8	44	b44	b55	a90	343	158	*329	2,250	2,360	930	147	91
9	44	b46	b55	a120	247	198	304	1,780	2,160	834	141	85
10	43	48	b60	a150	223	235	274	1,470	2,090	756	134	*82
11	44	72	b65	a130	250	241	256	1,260	2,240	695	130	80
12	44	72	b65	a120	215	226	256	1,190	2,490	645	126	77
13	43	*76	b65	a150	210	208	244	1,320	2,920	605	120	73
14	*43	59	b60	a180	198	185	232	*1,520	2,530	540	116	70
15	49	66	b60	*b140	180	190	215	1,660	2,420	493	110	73
16	49	61	b55	141	175	185	250	1,890	*2,330	439	108	72
17	49	61	b50	165	180	178	358	2,240	2,180	402	106	70
18	50	54	b50	304	163	165	410	2,620	2,140	366	102	70
19	49	52	b50	362	149	178	502	4,100	1,930	336	100	72
20	48	52	b50	350	b110	182	695	3,720	1,640	308	96	70
21	49	50	b48	294	b140	178	1,000	2,930	1,520	290	95	67
22	51	b34	b48	244	b140	178	1,260	2,420	1,520	265	93	67
23	49	b30	b42	218	*139	200	1,640	2,180	1,520	247	91	68
24	49	b20	a34	208	118	326	1,600	2,060	1,380	235	96	68
25	50	b26	a34	188	132	475	1,610	1,800	1,290	226	106	75
26	49	b30	a50	161	152	439	2,000	1,680	1,230	215	130	70
27	48	b32	a55	156	154	406	2,490	1,590	1,210	*205	158	66
28	51	b34	a60	152	163	418	2,790	1,540	1,190	198	132	66
29	51	b40	a60	147	-	390	2,060	1,830	1,140	190	141	73
30	51	b46	a55	143	-	362	1,620	2,050	1,100	182	130	73
31	52	-	a50	143	-	358	-	2,140	-	172	120	-
Total	1,455	1,462	1,619	4,861	5,938	7,272	24,702	60,640	59,660	16,868	4,072	2,352
Mean	46.9	48.7	52.2	157	212	235	823	1,956	1,989	544	131	78.4
Ac-ft	2,890	2,900	3,210	9,640	11,780	14,420	49,000	120,300	118,300	33,460	8,080	4,670

Calendar year 1952: Max 3,280 Min 20 Mean 472 Ac-ft 343,000
Water year 1952-53: Max 4,100 Min 20 Mean 523 Ac-ft 378,600

Peak discharge (base, 1,200 cfs).--Apr. 28 (12:30 a.m.) 3,150 cfs (7.03 ft); May 7 (2 a.m.) 2,850 cfs (6.78 ft); May 19 (9:30 p.m.) 4,670 cfs (8.21 ft); June 2 (4:30 a.m.) 3,180 cfs (7.06 ft); June 13 (2:30 a.m.) 3,390 cfs (7.23 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for nearby streams.

b Stage-discharge relation affected by ice.

Camas Creek near Lehman, Oreg.

Location.--Lat 45°10', long. 118°44', in SW¼ sec. 33, T. 4 S., R. 33 E., on left bank 2 miles downstream from Bowman Creek and 3½ miles northwest of Lehman.

Drainage area.--61 sq mi, approximately.

Records available.--October 1950 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 3,969.53 ft above mean sea level (levels by Oregon State Highway Department).

Extremes.--Maximum discharge during year, 808 cfs Jan. 18 (gage height, 2.96 ft), from rating curve extended above 400 cfs by logarithmic plotting; maximum gage height, 3.24 ft Jan. 18 (ice jam); minimum discharge, 1.1 cfs Oct. 1-5, Aug. 13-19.
1950-53: Maximum discharge, 1,220 cfs May 8, 1952 (gage height, 3.40 ft), from rating curve extended above 400 cfs by logarithmic plotting; maximum gage height, 3.70 ft about Feb. 1, 1951 (ice jam); minimum discharge, 0.7 cfs Sept. 20, 21, 1951.

Remarks.--Records good except those for periods of ice effect, no gage-height record, backwater from moss, and those above 400 cfs, which are fair. Slightly regulated at low flow by operation of irrigation ditches.

Rating table, water year 1952-53, except periods of ice effect or backwater from moss (gage height, in feet, and discharge, in cubic feet per second)

0.4	1.0	1.1	33
.5	1.7	1.4	75
.6	2.8	1.7	138
.7	4.7	2.0	230
.8	8.5	2.3	365
.9	15	2.7	610

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.1	1.5	b2.6	a2.7	79	30	119	186	101	15	1.9	1.5
2	1.1	1.5	2.1	a2.8	88	b28	101	154	88	13	1.8	1.4
3	1.1	1.5	2.0	a2.9	325	30	106	133	77	11	1.9	1.4
4	1.1	1.5	1.9	a2.9	238	26	126	128	70	10	2.0	1.4
5	1.1	1.5	1.9	a2.9	157	32	189	133	64	9.6	1.9	1.4
6	1.2	1.5	2.0	a2.8	168	30	186	146	65	8.5	1.8	1.4
7	1.2	1.5	2.0	a2.8	242	40	146	160	110	7.0	1.7	1.4
8	1.2	1.5	2.3	a2.9	223	67	*121	143	143	6.6	1.6	1.4
9	1.2	1.6	2.3	a3.5	141	101	110	116	138	*6.2	1.5	1.3
10	1.2	1.6	2.3	a5.5	112	116	95	97	131	5.6	1.5	1.2
11	1.2	1.6	2.4	a8.0	80	108	84	82	112	5.2	1.3	1.2
12	1.2	1.8	2.7	a15	67	97	82	73	121	5.0	1.2	1.2
13	1.2	*2.2	2.8	a25	58	80	80	67	171	4.7	*1.2	1.2
14	*1.2	2.1	b2.6	a36	55	70	79	64	128	4.2	1.2	1.2
15	1.3	2.1	2.5	*33	49	62	79	62	*114	4.2	1.1	1.2
16	1.3	1.9	2.4	30	45	62	99	62	99	4.0	1.1	1.2
17	1.3	1.8	2.3	107	43	59	223	62	80	3.6	1.2	1.2
18	1.3	1.9	2.3	b550	39	55	246	67	69	3.3	1.2	1.2
19	1.3	1.9	2.4	212	b36	56	306	152	62	3.3	1.1	1.2
20	1.3	1.9	2.4	202	b32	52	432	198	56	3.1	1.2	1.2
21	1.3	b2.1	b2.4	146	b34	51	450	198	45	2.8	1.2	1.4
22	1.3	b1.9	b2.2	99	b28	49	438	195	39	2.5	1.2	1.3
23	1.2	b1.8	b2.2	119	*b28	64	540	189	33	2.5	1.2	1.2
24	1.2	b1.6	b2.0	99	b25	157	398	212	30	2.5	1.5	1.2
25	1.2	b1.6	b2.2	79	b27	360	325	186	26	2.4	1.4	1.3
26	1.2	b1.7	a2.4	62	b27	254	320	186	23	2.4	2.1	1.3
27	1.3	1.7	a2.6	51	27	234	376	165	21	*2.3	2.2	1.3
28	1.3	b2.2	a2.7	45	31	242	468	136	21	2.1	1.9	1.4
29	1.3	b2.5	a2.8	46	-	177	*315	124	19	2.0	1.8	1.5
30	1.4	b3.0	a2.8	48	-	162	242	108	17	2.0	1.7	1.5
31	1.5	-	a2.7	52	-	143	-	99	-	1.9	1.8	-
Total	38.3	54.5	73.2	2,095.7	2,504	3,094	6,881	4,083	2,273	158.5	47.4	39.2
Mean	1.24	1.82	2.36	67.6	89.4	99.8	229	132	75.8	5.11	1.53	1.31
Ac-ft	76	108	145	4,160	4,970	6,140	13,650	8,100	4,510	314	94	78

Calendar year 1952: Max 808 Min 0.9 Mean 35.8 Ac-ft 25,960
Water year 1952-53: Max 550 Min 1.1 Mean 58.5 Ac-ft 42,340

Peak discharge (base, 250 cfs).--Jan 18 (3 p.m.) 808 cfs (2.96 ft); Feb. 3 (5 p.m.) 522 cfs (2.57 ft); Feb. 7 (5 p.m.) 376 cfs (2.32 ft); Mar. 25 (1 a.m.) 432 cfs (2.42 ft); Apr. 20 (8:30 p.m.) 659 cfs (2.77 ft); Apr. 27 (11:30 p.m.) 666 cfs (2.78 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for station near Ukiah.

b Stage-discharge relation affected by ice.

Note.--Backwater from moss Oct. 1 to Nov. 25, July 15 to Sept. 30.

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Camas Creek near Ukiah, Oreg.

Location.--Lat 45°09', long. 118°49', in SE¼ sec. 3, T. 5 S., R. 32 E., on right bank 1.2 miles upstream from Cable Creek and 6 miles east of Ukiah.

Drainage area.--121 sq mi.

Records available.--May 1914 to September 1917, November 1919 to June 1924, and October 1945 to September 1953 in reports of Geological Survey. May 1914 to September 1917, November 1919 to June 1924, and March 1932 to September 1941 (incomplete) in reports of State engineer; October 1941 to September 1945 (incomplete) in files of State engineer.

Gage.--Water-stage recorder. Datum of gage is 3,588.61 ft above mean sea level (levels by Oregon State Highway Department). May 1, 1914, to June 30, 1924, staff gage, and Mar. 1, 1932, to Nov. 7, 1940, water-stage recorder, at site 1.2 miles downstream at different datum.

Average discharge.--19 years (1914-17, 1919-23, 1940-44, 1945-53), 110 cfs.

Extremes.--Maximum discharge during year, 1,080 cfs Apr. 28 (gage height 3.85 ft); minimum, 3.0 cfs Oct. 13.

1914-17, 1919-24, 1932-53: Maximum discharge, 2,350 cfs Dec. 12, 1946 (gage height, 4.58 ft), from rating curve extended above 810 cfs by logarithmic plotting; minimum observed, 1 cfs Aug. 1-9, 1932, June 24 to July 2, 1940.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are fair. Slightly regulated at low flow by operation of irrigation ditches.

Rating tables, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 27				Apr. 28 to Sept. 30			
1.2	1.9	1.8	39	1.2	3.1	2.0	69
1.3	3.6	2.1	82	1.3	5.4	2.3	132
1.4	7.0	2.5	173	1.4	8.8	2.6	235
1.5	12	3.0	374	1.5	14	3.0	415
1.6	18	3.6	820	1.7	30	3.6	830

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.4	4.4	b10	b9.0	134	55	192	375	243	41	6.0	6.3
2	3.4	4.4	58.0	b9.5	146	b50	168	316	239	37	6.0	5.4
3	3.4	4.1	b7.5	b10	502	58	168	288	215	33	6.8	4.8
4	3.4	4.7	b7.0	b10	448	49	188	302	192	30	8.0	4.8
5	3.4	4.7	b7.0	b9.5	300	49	262	347	167	27	8.4	4.8
6	3.4	4.7	b7.5	b9.5	300	54	274	400	164	26	7.6	4.6
7	3.4	4.7	b8.0	b9.5	404	74	228	442	247	23	6.9	4.6
8	3.4	b4.8	b8.5	b9.5	391	116	*195	385	302	20	6.3	4.6
9	3.4	b5.5	b8.5	a15	243	162	176	311	293	*18	6.0	4.3
10	3.6	b5.5	b8.5	a20	185	192	154	251	280	18	6.0	4.0
11	3.4	b5.5	b9.0	a30	157	179	144	211	259	17	5.7	3.6
12	3.4	5.4	b10	a50	122	165	136	188	284	16	4.8	3.6
13	3.2	*6.2	b10	a60	116	144	136	181	370	15	*4.6	3.8
14	*3.2	a7.0	b9.5	a75	105	122	129	181	311	15	4.3	3.6
15	3.4	a7.0	b9.0	*b60	95	114	124	184	*271	14	4.0	3.6
16	3.6	a6.5	b8.5	b55	90	109	149	199	235	14	4.0	3.6
17	3.6	a6.0	b8.0	b160	86	103	296	223	192	13	4.3	3.4
18	3.6	a6.5	b8.0	811	72	97	354	247	164	12	4.0	3.4
19	3.6	a6.5	b8.5	396	61	101	430	432	149	11	3.8	3.4
20	3.6	a6.5	b8.5	338	b55	95	568	488	135	11	3.6	3.4
21	3.6	b8.0	b8.0	262	b60	95	640	442	113	11	3.8	3.4
22	3.6	b7.0	b7.5	185	b50	93	667	400	95	10	3.8	3.6
23	3.6	b5.5	b7.5	198	*b48	114	802	380	83	9.2	4.0	3.6
24	3.6	3.8	b7.0	173	b46	320	640	405	76	8.8	5.1	3.4
25	3.6	4.4	b7.5	149	b50	560	576	370	69	8.8	5.4	3.4
26	3.8	6.2	b8.0	122	b50	396	608	352	60	8.8	9.7	3.6
27	3.8	b5.5	b8.5	101	b55	359	703	324	54	*8.0	12	3.6
28	4.1	b6.5	b9.0	92	58	374	822	306	53	6.9	8.8	4.0
29	4.1	b7.5	b9.5	88	-	282	*600	267	51	6.3	8.0	4.3
30	4.1	b9.0	b9.5	90	-	251	476	251	46	6.3	7.2	4.0
31	4.4	-	b9.0	93	-	228	-	239	-	6.0	6.6	-
Total	111.1	174.0	260.5	3,699.5	4,429	5,160	11,005	9,687	5,412	501.1	185.3	120.5
Mean	3.58	5.80	8.40	119	158	166	367	312	180	16.2	5.98	4.02
Ac-ft	220	345	517	7,340	8,780	10,230	21,830	19,210	10,730	994	368	239

Calendar year 1952: Max 1,240 Min 2.5 Mean 86.0 Ac-ft 62,470
Water year 1952-53: Max 822 Min 3.2 Mean 112 Ac-ft 80,800

Peak discharge (base, 550 cfs).--Jan. 18 (6 p.m.) 1,050 cfs (3.83 ft); Feb. 3 (6 p.m.) 811 cfs (3.59 ft); Feb. 7 (6:30 p.m.) 584 cfs (3.33 ft); Mar. 24 (7 p.m.) 624 cfs (3.38 ft); Apr. 23 (12:30 a.m.) 910 cfs (3.69 ft); Apr. 28 (12:30 a.m.) 1,080 cfs (3.85 ft); May 19 (10 p.m.) 551 cfs (3.23 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for station near Lehman.

b Stage-discharge relation affected by ice.

Middle Fork John Day River at Ritter, Oreg.

Location.--Lat 44°53', long. 119°08', in NW¼ sec. 8, T. 8 S., R. 30 E., on left bank 35 ft downstream from bridge and half a mile south of Ritter.

Drainage area.--526 sq mi.

Records available.--October 1929 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 2,544.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--24 years, 232 cfs.

Extremes.--Maximum discharge during year, 1,990 cfs Apr. 28 (gage height, 5.83 ft); minimum, 2.3 cfs Nov. 22, result of freezeup.
1929-53: Maximum discharge, 4,000 cfs Mar. 19, 1932 (gage height, 7.78 ft), from rating curve extended above 2,200 cfs; maximum gage height, 8.50 ft Feb. 18, 1949 (ice jam); minimum discharge, 1.0 cfs Dec. 10, 1932.

Remarks.--Records excellent except those for periods of ice effect or no gage-height record, which are good. Several small diversions above station for irrigation.

Revisions (water years).--WSP 739: 1931. WSP 1218: 1950.

Rating table, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.5	6	3.0	178
1.7	14	3.5	300
2.0	33	4.0	505
2.2	51	5.0	1,140
2.5	88	5.8	1,960

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	32	33	63	197	186	540	900	817	424	63	50
2	24	32	39	60	235	164	478	769	921	399	62	47
3	25	32	46	58	803	178	464	693	874	383	64	44
4	25	31	58	b55	935	168	487	693	842	367	94	42
5	25	31	61	b50	*822	162	600	787	811	339	87	41
6	25	36	58	b46	660	168	666	928	829	321	73	39
7	25	39	56	b50	660	191	580	1,010	1,070	297	67	38
8	25	35	55	b55	727	226	492	914	1,110	282	62	38
9	25	b26	52	b130	492	300	*428	787	1,070	258	59	35
10	25	b32	51	223	391	355	387	682	1,020	238	55	*33
11	26	38	51	156	347	343	351	595	1,000	217	53	32
12	26	41	55	125	285	328	335	540	1,070	201	51	29
13	26	49	56	152	270	300	324	540	1,570	182	48	28
14	27	51	b50	*221	250	255	304	*600	1,250	172	47	28
15	*27	50	b50	168	233	252	285	605	1,140	164	45	29
16	28	48	b48	137	217	240	321	649	*1,110	152	42	27
17	30	41	48	243	238	240	540	739	994	145	41	26
18	30	40	46	856	217	226	638	854	935	132	41	25
19	30	39	46	649	197	238	682	1,340	854	119	40	21
20	30	*41	46	469	156	288	811	1,730	751	112	39	22
21	30	31	b42	424	172	273	994	1,350	698	107	39	24
22	31	6	b44	300	182	294	1,110	1,140	671	101	39	24
23	31	14	b32	282	174	469	1,290	1,030	649	94	39	23
24	32	23	b25	233	148	811	1,200	1,160	585	93	42	25
25	33	a25	b30	214	150	994	1,100	963	555	88	46	26
26	34	a27	b50	191	*160	763	1,180	874	530	84	55	27
27	35	a30	b65	162	186	688	1,440	829	515	81	66	27
28	31	a32	b60	152	214	745	1,870	757	478	*78	64	28
29	32	a34	b65	147	-	660	1,400	763	469	73	69	31
30	30	a33	b65	145	-	610	1,110	805	446	69	64	31
31	32	-	64	154	-	610	-	775	-	67	55	-
Total	879	1,019	1,547	6,350	9,418	11,725	22,407	26,801	25,634	5,839	1,711	940
Mean	28.4	34.0	49.9	205	336	378	747	865	854	188	55.2	31.3
Ac-ft	1,740	2,020	3,070	12,600	18,680	23,260	44,440	53,160	50,840	11,580	3,390	1,860

Calendar year 1952: Max 2,170 Min 6 Mean 306 Ac-ft 222,000
Water year 1952-53: Max 1,870 Min 6 Mean 313 Ac-ft 226,600

Peak discharge (base, 760 cfs).--Jan. 18 (3:30 p.m.) 1,190 cfs (5.06 ft); Feb. 3 (5:30 p.m.) 1,390 cfs (5.26 ft); Feb. 7 (9 p.m.) 874 cfs (4.66 ft); Mar. 25 (3 a.m.) 1,180 cfs (5.04 ft); Apr. 28 (6 a.m.) 1,990 cfs (5.83 ft); May 7 (10 a.m. to 12 m.) 1,040 cfs (4.89 ft); May 20 (1:30 a.m.) 1,900 cfs (5.75 ft); June 13 (2:30 a.m.) 1,820 cfs (5.67 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for North Fork John Day River at Monument.

b Stage-discharge relation affected by ice.

Fox Creek at gorge, near Fox, Oreg.
(The lower part of this stream is named Cottonwood Creek)

Location.--Lat 44°37'30", long. 119°15'10", in SW¼ sec. 8, T. 11 S., R. 29 E., on left bank half a mile upstream from head of gorge and 6 miles southwest of Fox.

Drainage area.--90.2 sq mi.

Records available.--October 1930 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 4,240 ft (from topographic map). Prior to June 12, 1952, at site half a mile downstream at different datum.

Average discharge.--23 years, 23.9 cfs.

Extremes.--Maximum discharge during year, 830 cfs Mar. 24 (gage height, 5.15 ft), from rating curve extended above 250 cfs by slope-area determination at gage height 6.14 ft; no flow Oct. 1 to Nov. 11, Nov. 17-28, Sept. 12-30.
1930-53: Maximum discharge, 1,860 cfs Mar. 25, 1952 (gage height, 6.14 ft, present site and datum), from rating curve extended above 200 cfs by slope-area determination of peak flow; no flow at times.

Remarks.--Records good except those for periods of ice effect or no gage-height record and those above 300 cfs, which are fair. Several diversions above station for irrigation of about 4,800 acres.

Revisions (water years).--WSP 754: 1932(M). WSP 1184: Drainage area.

Rating table, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.8	0	1.7	27
.9	.1	2.0	47
1.0	.6	2.5	89
1.1	2.1	3.0	147
1.2	4.7	3.5	230
1.3	7.8	4.0	350
1.5	16	4.4	480

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		0	0.2	1.4	b22	b23	60	139	83	15	0.6	0.4
2		0	.1	2.0	32	b18	53	112	118	13	.5	.3
3		0	.1	2.0	117	b21	50	95	124	12	.2	.2
4		0	.1	2.0	153	b27	49	89	82	10	.2	.2
5		0	.1	1.7	94	b30	56	93	74	9.3	.2	.2
6		0	.1	1.8	138	b60	56	104	76	8.5	.2	.2
7		0	.2	2.5	123	104	56	121	94	7.2	.1	.2
8		0	.3	3.2	104	94	*52	123	150	6.6	.2	.2
9		0	.3	4.6	b60	66	50	103	154	5.6	.3	.1
10		0	.4	9.0	b50	52	48	87	128	5.0	.3	.1
11		0	.5	16	b46	42	41	73	103	3.8	.4	*.1
12		.1	.6	24	b40	45	44	64	92	3.2	.4	0
13		.1	.7	40	b42	41	43	*60	189	3.2	.3	0
14		.1	.7	*b46	b46	b30	38	66	164	4.1	.2	0
15		.1	.6	b40	b40	33	34	73	103	3.5	.2	0
16		.1	.5	26	b36	34	35	68	98	3.0	.1	0
17		0	.5	64	b36	b30	53	67	*85	2.8	.1	0
18		0	.5	127	b30	34	58	73	70	2.5	.1	0
19		0	.4	154	b28	48	53	134	60	2.3	.1	0
20		*0	.4	108	b17	49	58	230	56	2.1	.1	0
21		0	.4	85	b19	56	81	166	49	2.1	.1	0
22		0	.4	41	b20	57	106	124	42	1.9	.1	0
23		0	.3	34	b16	97	132	126	36	1.3	.1	0
24		0	.3	30	b11	468	140	173	32	1.3	.2	0
25		0	.4	21	b12	*345	132	161	29	1.3	.2	0
26		0	.5	b15	*b14	122	143	140	25	1.2	.3	0
27		0	.6	11	b18	94	234	115	22	1.2	.4	0
28		0	.6	13	b23	96	416	97	20	*1.2	.6	0
29		.1	.6	b14	-	91	257	89	18	1.0	.9	0
30		.2	.6	b15	-	74	187	85	16	.9	.7	0
31		-	.5	b16	-	68	-	77	-	.8	.5	-
Total	0	0.8	12.5	970.2	1,387	2,449	2,815	3,327	2,392	136.9	8.9	2.2
Mean	0	0.03	0.40	31.3	49.5	79.0	93.8	107	79.7	4.42	0.29	0.07
Ac-ft	0	1.6	25	1,920	2,750	4,860	5,580	6,600	4,740	272	18	4.4

Calendar year 1952: Max 800 Min 0 Mean 33.6 Ac-ft 24,410
Water year 1952-53: Max 468 Min 0 Mean 37.0 Ac-ft 26,770

Peak discharge (base, 150 cfs).--Jan. 19 (7 a.m.) 187 cfs (3.27 ft); Feb. 4 (4:30 a.m.) 214 cfs (3.42 ft); Mar. 24 (10 p.m.) 830 cfs (5.15 ft); Apr. 28 (5 a.m.) 460 cfs (4.35 ft); May 20 (12 m.) 259 cfs (3.63 ft); May 24 (8 a.m.) 176 cfs (3.20 ft); June 8 (11:30 p.m.) 182 cfs (3.24 ft); June 13 (9:30 p.m.) 224 cfs (3.47 ft).

* Discharge measurement or observation of no flow made on this day.

b Stage-discharge relation affected by ice.

Note.--No gage-height record Nov. 29 to Jan. 13; discharge estimated on basis of recorded range in stage, weather records, and records for Camas Creek near Lehman and Willow Creek near Heppner.

North Fork John Day River at Monument, Oreg.

Location.--Lat 44°49', long. 119°26', in E½ sec. 1, T. 9 S., R. 27 E., on right bank just downstream from entrance to canyon, a quarter of a mile downstream from Cottonwood Creek and three-quarters of a mile west of Monument.

Drainage area.--2,520 sq mi, approximately.

Records available.--March 1925 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 1,959.64 ft above mean sea level, datum of 1929. Prior to Nov. 24, 1925, staff gage at same site at different datum. Nov. 25, 1925, to Sept. 30, 1930, water-stage recorders at same site at various datums.

Average discharge.--27 years (1925-27, 1928-53), 1,151 cfs.

Extremes.--Maximum discharge during year, 11,900 cfs Apr. 28 (gage height, 10.95 ft); minimum, 41 cfs Nov. 24.

1925-53: Maximum discharge, 22,000 cfs Mar. 18, 1932 (gage height, 14.8 ft), from rating curve extended above 12,000 cfs by logarithmic plotting; minimum, 6 cfs sometime during period Nov. 2-13, 1936.

Remarks.--Records excellent. Many small diversions above station for irrigation.

Revisions (water years).--WSP 754: 1932(M).

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

2.6	49	5.0	1,680
2.8	86	7.0	4,650
3.1	171	9.0	8,060
3.5	360	10.3	10,600
4.0	710		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	88	110	96	187	1,120	1,000	2,560	4,790	4,520	1,800	246	202
2	93	110	98	183	1,320	806	2,210	3,990	5,070	1,700	237	183
3	93	110	103	179	3,680	854	2,130	3,560	4,750	1,870	232	175
4	93	105	116	175	2,390	879	2,120	3,610	4,330	1,630	270	164
5	93	103	132	183	3,610	806	2,450	4,280	3,990	1,540	354	161
6	91	113	141	175	4,070	870	2,870	5,190	3,900	1,490	295	154
7	88	118	158	187	3,950	1,100	2,570	5,920	4,870	1,450	260	148
8	91	116	158	214	4,790	1,270	2,210	5,430	5,070	1,400	237	145
9	93	91	150	869	3,050	1,470	1,970	4,550	4,840	1,300	214	145
10	93	84	171	1,160	2,380	1,720	1,790	3,750	4,630	1,180	206	*138
11	93	127	171	710	2,120	1,680	1,660	3,220	4,490	1,100	187	132
12	93	148	179	897	1,760	1,610	1,550	2,930	4,700	1,000	190	124
13	96	164	190	1,370	1,630	1,500	1,520	*2,960	6,400	933	179	121
14	93	175	168	*1,560	1,500	1,330	1,440	3,140	5,380	862	168	118
15	*93	161	160	1,140	1,360	1,260	1,340	3,350	4,830	790	161	113
16	98	158	175	870	1,230	1,170	1,420	3,550	4,730	718	151	108
17	100	148	168	1,400	1,360	1,170	2,130	4,010	*4,300	654	148	110
18	100	130	168	5,620	1,270	1,130	2,980	4,540	4,040	592	145	110
19	100	121	164	5,290	1,120	1,210	3,340	6,530	3,710	534	138	110
20	100	*118	171	4,170	969	1,450	4,140	8,280	3,280	485	132	105
21	100	105	168	3,590	924	1,470	5,130	6,530	2,940	466	130	105
22	100	64	158	2,370	996	1,560	5,510	5,560	2,780	433	130	100
23	103	65	130	2,140	933	2,100	6,550	5,110	2,690	396	130	103
24	103	63	100	1,850	838	4,260	6,310	5,800	2,480	372	138	105
25	103	60	110	1,580	766	7,060	5,920	5,020	2,330	349	141	108
26	105	65	116	1,340	*790	*4,810	6,330	4,780	2,190	344	190	113
27	108	74	145	1,130	888	3,990	8,190	4,430	2,090	322	246	113
28	108	86	198	1,030	1,140	4,110	10,400	4,040	2,010	305	250	110
29	105	90	202	969	-	3,560	7,540	4,090	1,930	*290	242	110
30	110	95	210	951	-	3,080	5,970	4,430	1,880	275	242	118
31	108	-	198	933	-	2,920	-	4,200	-	255	214	-
Total	3,035	3,277	4,772	44,422	54,554	63,205	112,250	141,570	115,150	26,635	6,203	3,851
Mean	97.9	109	154	1,433	1,948	2,039	3,742	4,567	3,838	859	200	128
Ac-ft	6,020	6,500	9,470	88,110	108,200	125,400	222,600	280,800	228,400	52,830	12,300	7,640

Calendar year 1952: **Max** 12,100 **Min** 60 **Mean** 1,400 **Ac-ft** 1,016,000
Water year 1952-53: **Max** 10,400 **Min** 60 **Mean** 1,586 **Ac-ft** 1,148,000

Peak discharge (base, 4,900 cfs).--Jan. 18 (8:30 p.m.) 8,520 cfs (9.25 ft); Feb. 3 (11 p.m.) 6,800 cfs (8.29 ft); Feb. 8 (4 a.m.) 5,780 cfs (7.69 ft); Mar. 25 (3:30 a.m.) 9,560 cfs (9.80 ft); Apr. 28 (6 a.m.) 11,900 cfs (10.95 ft); May 7 (7 to 11 a.m.) 6,080 cfs (7.85 ft); May 20 (5 a.m.) 9,200 cfs (9.61 ft); June 2 (10 a.m.) 5,440 cfs (7.49 ft); June 13 (7 a.m.) 7,300 cfs (8.58 ft).

* Discharge measurement made on this day.

John Day River at Service Creek, Oreg.

Location.--Lat 44°47'40", long. 120°00'10", in NE¼ sec. 18, T. 9 S., R. 23 E., on right bank a quarter of a mile downstream from Service Creek and three-quarters of a mile southwest of Service Creek Post Office.

Drainage area.--5,090 sq mi, approximately.

Records available.--October 1929 to September 1953 in reports of Geological Survey. March 1925 to September 1926 and October 1929 to September 1941 in reports of State engineer.

Gage.--Water-stage recorder. Datum of gage is 1,635.83 ft above mean sea level, datum of 1929. Prior to Nov. 6, 1929, staff gage at site 12 miles downstream at different datum. Nov. 6, 1929, to Sept. 25, 1930, water-stage recorder at present site at datum 0.80 ft higher.

Average discharge.--25 years (1925-26, 1929-53), 1,733 cfs.

Extremes.--Maximum discharge during year, 16,800 cfs Apr. 28 (gage height, 12.58 ft); minimum, 97 cfs Dec. 25.
1929-53: Maximum discharge, 28,900 cfs Mar. 19, 1932 (gage height, 16.75 ft); minimum, 20 cfs Sept. 6, 1931.

Remarks.--Records good. Many diversions above station for irrigation.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 28				Apr. 29 to Sept. 30			
1.7	132	5.0	1,810	1.8	165	5.0	1,860
2.0	200	6.0	2,780	2.0	215	7.0	4,050
2.5	340	8.0	5,560	2.5	370	9.0	7,300
3.0	540	10.0	9,520	3.0	572	11.2	12,700
4.0	1,070	12.1	15,300	4.0	1,110		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	152	261	318	491	1,510	1,950	4,540	7,940	6,490	2,660	395	440
2	152	275	330	495	1,800	1,660	4,050	6,510	7,030	2,530	377	402
3	159	281	321	475	3,080	1,520	3,680	5,800	*7,080	2,420	367	377
4	163	290	318	463	7,360	1,590	3,600	5,620	6,540	2,370	367	350
5	166	293	324	423	5,740	1,570	3,770	5,720	6,370	2,270	410	339
6	163	311	337	443	6,230	1,570	4,360	6,560	6,080	2,180	472	326
7	161	311	344	427	6,320	1,750	*4,390	7,540	6,580	2,110	425	310
8	161	321	379	479	7,540	2,010	3,910	7,700	7,740	2,020	399	295
9	161	314	375	911	5,860	2,250	3,440	6,580	7,260	1,930	381	282
10	168	290	379	2,120	4,500	2,600	3,190	5,820	7,100	1,760	360	267
11	172	287	403	1,410	3,850	2,770	3,010	5,220	6,690	1,620	343	258
12	184	334	407	1,360	3,340	2,650	2,720	4,570	6,580	1,470	323	246
13	188	368	411	*1,860	2,860	2,520	2,630	*4,190	8,200	1,360	310	235
14	200	391	415	2,310	2,690	2,300	2,520	4,330	8,030	1,240	295	221
15	207	411	391	2,060	2,540	2,120	2,340	4,620	7,120	*1,140	273	210
16	*212	399	391	1,560	2,260	2,030	2,280	4,800	6,940	1,070	264	205
17	222	391	395	1,590	2,250	2,010	2,690	5,110	6,490	984	255	199
18	227	372	383	5,140	2,360	1,920	4,040	5,640	6,200	912	249	197
19	237	*361	375	9,760	2,110	1,980	4,450	7,210	5,860	837	243	194
20	258	350	395	6,300	1,910	2,390	5,240	12,200	5,380	770	237	192
21	258	347	387	6,330	1,630	2,410	6,670	10,400	4,780	720	226	192
22	247	314	383	4,500	1,740	2,530	7,620	8,780	4,390	671	221	189
23	247	256	372	3,590	1,730	3,030	8,800	7,540	4,000	609	215	184
24	258	232	284	3,110	*1,610	5,670	9,420	8,430	3,710	581	218	179
25	256	229	179	2,600	1,460	9,860	8,470	8,030	3,430	550	223	184
26	258	237	227	2,330	1,430	7,680	8,560	7,340	3,270	523	246	197
27	264	217	305	1,920	1,560	6,420	10,700	6,890	3,060	506	*323	199
28	267	224	330	1,670	1,790	6,180	15,200	6,350	2,910	468	377	207
29	267	256	415	1,590	-	5,960	12,600	6,090	2,850	456	425	207
30	264	240	463	1,550	-	5,270	9,990	6,260	2,800	436	436	210
31	267	-	479	1,490	-	4,900	-	6,230	-	414	472	-
Total	6,566	9,163	11,215	70,757	89,060	101,070	168,880	206,020	170,960	39,587	10,127	7,493
Mean	212	305	362	2,282	3,181	3,260	5,629	6,646	5,699	1,277	327	250
Ac-ft	13,020	18,170	22,240	140,300	176,600	200,500	335,000	408,600	339,100	78,520	20,090	14,860

Calendar year 1952: Max 21,400 Min 147 Mean 2,208 Ac-ft 1,603,000
Water year 1952-53: Max 15,200 Min 152 Mean 2,441 Ac-ft 1,767,000

Peak discharge (base, 5,200 cfs).--Jan. 19 (6 a.m.) 12,500 cfs (11.14 ft); Feb. 4 (6 a.m.) 9,060 cfs (9.81 ft); Feb. 8 (12 m.) 8,680 cfs (9.65 ft); Mar. 25 (10 a.m.) 12,700 cfs (11.21 ft); Apr. 28 (2 p.m.) 16,800 cfs (12.58 ft); May 8 (2 a.m.) 8,050 cfs (9.37 ft); May 20 (12:30 p.m.) 13,000 cfs (11.30 ft); June 13 (5:30 p.m.) 10,000 cfs (10.20 ft).
* Discharge measurement made on this day.

John Day River at McDonald Ferry, Oreg.

Location.--Lat 45°35'20", long. 120°24'30", in NW¼ sec. 11, T. 1 N., R. 19 E., on left bank at McDonald Ferry half a mile downstream from Rock Creek and 10 miles east of Klondike.

Drainage area.--7,580 sq mi, approximately.

Records available.--December 1904 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 392.27 ft above mean sea level, datum of 1929. Prior to Aug. 30, 1930, staff gage at same site and datum.

Average discharge.--48 years (1905-53), 1,991 cfs.

Extremes.--Maximum discharge during year, 15,800 cfs Apr. 29 (gage height, 8.17 ft); minimum, 145 cfs Oct. 5, 6 (gage height, 1.30 ft).

1904-53: Maximum discharge, 27,800 cfs Feb. 6, 1907 (gage height, 10.8 ft); maximum gage height, 13.2 ft Feb. 8, 1950 (from floodmark, ice jam); minimum discharge, 4 cfs Aug. 31, 1931 (gage height, 0.68 ft).

Maximum discharge known, 39,100 cfs, from rating curve extended above 22,000 cfs, probably occurred in 1894 (gage height, 12.8 ft).

Remarks.--Records excellent. Diversions above station for irrigation.

Revisions (water years).--WSP 1094: 1894(M), 1907, 1932(M).

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.3	145	4.0	3,130
1.5	235	5.0	5,300
2.0	540	6.0	8,070
2.5	990	7.0	11,300
3.0	1,540	8.0	15,100

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	162	288	290	519	1,760	1,870	4,990	9,800	6,310	2,800	424	438
2	153	283	270	564	1,790	2,210	4,610	8,100	6,610	2,690	412	457
3	153	283	340	556	2,020	1,940	4,120	6,920	*7,180	2,530	405	457
4	153	288	360	580	3,440	1,750	3,800	6,100	7,210	2,380	412	424
5	149	299	360	548	7,950	1,780	3,740	5,780	6,690	2,310	418	405
6	149	305	369	533	6,530	1,760	3,890	6,100	6,450	2,240	412	381
7	166	322	369	526	6,920	1,750	4,500	7,120	6,070	2,110	405	363
8	179	334	375	526	7,060	1,800	4,570	8,070	6,720	2,050	470	351
9	170	345	399	970	8,130	2,080	4,100	7,980	7,890	1,940	457	351
10	170	351	*444	1,180	6,100	2,310	3,680	6,950	7,500	1,890	418	334
11	174	357	450	1,680	4,680	*2,650	3,360	5,990	7,320	1,750	412	305
12	179	351	444	1,930	4,080	2,900	3,130	5,250	6,890	1,620	399	288
13	183	339	444	1,590	3,700	2,800	2,920	4,700	6,830	1,520	369	272
14	183	351	450	1,820	3,240	2,710	2,780	4,340	8,620	*1,400	345	262
15	187	393	457	2,340	3,040	2,510	2,690	4,360	8,220	1,300	339	246
16	187	412	457	2,360	2,810	2,240	2,530	4,680	7,270	1,220	334	230
17	192	438	450	1,890	2,650	2,180	2,410	4,820	7,040	1,130	305	*221
18	197	444	438	1,850	2,600	2,100	2,620	5,180	6,480	1,060	288	197
19	216	431	457	5,740	2,650	2,050	3,890	5,780	6,040	980	277	201
20	235	418	457	9,800	2,430	2,080	4,500	7,710	5,680	910	262	187
21	240	405	457	7,120	2,220	2,380	5,300	11,700	5,250	854	240	187
22	*251	399	457	6,530	1,940	2,580	*6,810	10,100	4,660	791	240	187
23	267	405	457	4,590	1,920	2,760	7,770	8,800	4,250	728	235	192
24	267	375	444	3,760	1,940	3,580	8,930	7,860	3,970	692	235	197
25	256	340	438	3,420	1,860	6,750	9,310	8,800	3,760	612	230	192
26	251	320	387	2,960	1,720	10,500	8,650	8,400	3,500	564	235	192
27	256	260	272	2,600	1,660	8,160	8,930	7,650	3,300	548	*246	187
28	262	270	235	2,260	1,750	6,670	11,400	7,150	3,090	540	251	192
29	283	246	288	*1,960	-	6,420	14,700	6,500	2,960	512	328	192
30	288	235	431	1,870	-	6,120	11,900	6,120	2,850	477	418	206
31	288	-	505	1,790	-	5,380	-	6,480	-	464	444	-
Total	6,446	10,287	12,451	76,362	98,590	104,770	166,530	215,290	176,810	42,612	10,665	8,294
Mean	208	343	402	2,463	3,521	3,380	5,551	6,945	5,887	1,375	344	276
Ac-ft	12,790	20,400	24,700	151,500	195,600	207,800	330,300	427,000	350,300	84,520	21,150	16,450

Calendar year 1952: Max 20,000 Min 138 Mean 2,322 Ac-ft 1,686,000
Water year 1952-53: Max 14,700 Min 149 Mean 2,545 Ac-ft 1,843,000

Peak discharge (base, 6,300 cfs).--Jan. 20 (5 a.m.) 11,300 cfs (7.00 ft); Feb. 5 (4:30 a.m.) 9,050 cfs (6.32 ft); Feb. 9 (9 a.m.) 9,090 cfs (6.33 ft); Mar. 26 (7:30 a.m.) 12,200 cfs (7.25 ft); Apr. 29 (10:30 a.m.) 15,800 cfs (8.17 ft); May 8 (2 p.m.) 8,400 cfs (6.11 ft); May 21 (11 a.m.) 12,200 cfs (7.26 ft); June 14 (2 to 4 p.m.) 9,860 cfs (6.57 ft).

* Discharge measurement made on this day.

Deschutes River below Snow Creek, near Lapine, Oreg.

Location.--Lat 43°48'50", long. 121°46'40", in NW¼ sec. 28, T. 20 S., R. 8 E., on left bank at flow line of Crane Prairie Reservoir, 50 ft downstream from Snow Creek, 300 ft upstream from bridge, and 17 miles northwest of Lapine.

Drainage area.--132 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--November 1937 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 4,445 ft (from elevation of Crane Prairie Reservoir when slack water extended to gage). Prior to Sept. 9, 1938, at site 450 ft downstream at different datum.

Average discharge.--15 years (1938-53), 146 cfs.

Extremes.--Maximum discharge during year, 335 cfs Aug. 26, 28 (gage height, 2.42 ft); minimum, 92 cfs Mar. 30, Apr. 1-3, 8-16 (gage height, 1.16 ft).
1937-53: Maximum discharge, 357 cfs Aug. 21, 1951 (gage height, 2.74 ft); maximum gage height, 4.12 ft Jan. 21, 1943 (ice jam); minimum discharge, 43 cfs Dec. 27, 1941 (gage hieght, 1.12 ft).

Remarks.--Records good except those for periods of backwater from Crane Prairie Reservoir, which are fair, and those for periods of no gage-height record, which are poor. No diversion or regulation above station.

Revisions (water years).--WSP 1248: 1951.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	248	196	176	150	129	104	92	109	196	203	224	318
2	252	205	176	150	134	104	92	109	185	201	228	317
3	250	205	174	145	140	104	92	111	187	201	232	317
4	248	199	174	145	134	104	94	113	185	201	238	317
5	248	*192	174	145	136	102	94	118	190	201	243	317
6	247	196	178	145	136	100	94	122	201	201	248	320
7	245	201	183	145	129	100	94	127	218	203	254	316
8	243	199	180	140	127	100	92	129	203	*200	255	314
9	239	196	176	140	124	100	92	131	210	201	260	312
10	239	196	178	140	122	100	92	131	*203	201	266	311
11	238	199	176	140	120	100	92	*131	205	201	*271	310
12	236	201	171	140	120	100	92	134	203	201	278	308
13	236	201	169	135	120	100	92	136	201	201	281	306
14	234	201	167	135	120	96	92	140	203	203	284	305
15	234	199	164	135	122	96	92	145	201	*203	286	*305
16	232	196	162	135	122	98	92	150	203	203	286	302
17	230	192	162	135	120	98	94	152	203	201	289	299
18	228	190	160	135	118	98	94	162	201	201	291	297
19	224	187	160	130	116	98	96	178	203	201	294	296
20	*224	187	160	130	114	98	100	178	203	201	297	294
21	220	185	160	130	112	100	104	187	201	201	299	292
22	220	183	160	130	110	100	104	183	201	201	300	291
23	218	180	155	130	110	98	107	187	199	203	302	289
24	216	180	155	125	109	98	109	183	199	203	305	288
25	212	178	155	125	109	96	109	183	199	205	311	286
26	210	176	155	125	107	96	111	190	196	205	328	284
27	207	174	155	125	104	94	113	190	199	207	317	283
28	205	174	150	125	104	94	111	183	201	210	322	283
29	205	171	150	*124	-	94	111	185	201	214	324	281
30	201	171	150	124	-	94	111	183	203	216	320	279
31	201	-	150	124	-	*94	-	190	-	218	320	-
Total	7,090	5,710	5,115	4,182	3,368	3,058	2,954	4,750	6,003	6,312	8,753	9,037
Mean	229	190	165	135	120	98.6	98.5	153	200	204	282	301
Ac-ft	14,060	11,330	10,150	8,290	6,680	6,070	5,860	9,420	11,910	12,520	17,360	17,920

Calendar year 1952: Max 329 **Min** 94 **Mean** 203 **Ac-ft** 147,100
Water year 1952-53: Max 328 **Min** 92 **Mean** 182 **Ac-ft** 131,600

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 18 to Jan. 28, Feb. 17-23; discharge interpolated. Backwater from Crane Prairie Reservoir Oct. 1 to Nov. 6, May 17 to July 13.

Cultus River above Cultus Creek, near Lapine, Oreg.

Location.--Lat 43°49'10", long. 121°47'50", in sec. 20 or 29, T. 20 S., R. 8 E., on left bank at highway crossing, upstream from flow line of Crane Prairie Reservoir, 2 miles upstream from Cultus Creek and 18 miles northwest of Lapine.

Drainage area.--16.5 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--June 1923 to September 1925, November 1937 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 4,450 ft (by barometer). Prior to Nov. 1, 1937, staff gage at site half a mile upstream at different datum.

Average discharge.--17 years (1923-25, 1938-53), 63.7 cfs.

Extremes.--Maximum discharge during year, 101 cfs June 7, 8; maximum gage height, 1.23 ft Oct. 30 (backwater from culvert installation); minimum discharge, 50 cfs Mar. 3-6.
1923-25, 1937-53: Maximum discharge, 137 cfs May 10, July 26, 27, July 31 to Aug. 2, 1951; maximum gage height, that of Oct. 30, 1952; minimum discharge recorded, 28 cfs Mar. 22, Apr. 5-10, Nov. 18, 21, 1941.

Remarks.--Records good. No diversion or regulation above station.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from culvert installation Oct. 30 to Nov. 4)

0.6	41
.9	101

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	87	92	90	72	62	51	56	66	96	92	96	87
2	87	92	90	72	62	51	55	66	96	92	96	87
3	90	92	90	72	62	50	55	66	96	92	96	87
4	90	92	90	72	62	50	55	68	96	90	96	90
5	90	*92	90	72	62	50	55	70	96	87	96	90
6	92	92	90	70	62	50	55	70	96	85	99	90
7	94	90	92	70	62	51	55	72	101	85	99	90
8	94	90	92	70	62	53	55	72	101	*85	99	90
9	94	90	85	70	62	53	53	76	96	85	99	87
10	94	90	80	70	62	55	53	78	*96	85	99	87
11	96	90	78	70	62	55	53	80	96	85	*99	87
12	96	90	78	70	64	55	53	83	96	87	99	85
13	96	90	78	70	64	56	53	83	96	87	96	85
14	96	90	78	68	64	56	53	83	96	87	96	85
15	96	90	78	68	62	56	53	83	96	*87	94	*83
16	96	90	78	68	62	58	53	83	96	90	92	83
17	96	90	78	68	62	56	55	87	96	90	92	83
18	96	90	78	68	60	58	55	90	96	90	90	83
19	96	90	78	68	60	58	55	92	99	90	90	83
20	*94	90	78	68	60	58	55	92	99	90	90	83
21	92	90	78	68	58	58	56	90	96	92	90	80
22	92	90	78	68	58	58	58	90	96	92	90	80
23	92	90	78	66	58	56	58	87	99	92	90	80
24	92	90	76	66	56	56	60	87	99	92	90	78
25	92	90	76	66	55	56	60	87	99	92	87	78
26	92	90	76	66	53	56	60	87	96	92	87	78
27	94	92	76	64	53	56	62	87	96	92	87	78
28	92	90	76	64	53	56	64	90	96	92	87	78
29	92	90	74	*62	-	56	64	92	94	94	87	78
30	90	90	74	62	-	56	66	92	94	94	90	78
31	92	-	72	62	-	*56	-	94	-	94	90	-
Total	2,882	2,714	2,503	2,110	1,684	1,700	1,693	2,543	2,901	2,779	2,888	2,511
Mean	93.0	90.5	80.7	68.1	60.1	54.8	56.4	82.0	96.7	89.6	93.2	83.7
Ac-ft	5,720	5,380	4,960	4,190	3,340	3,370	3,360	5,040	5,750	5,510	5,730	4,980

Calendar year 1952: Max 124 Min 58 Mean 87.9 Ac-ft 63,840
Water year 1952-53: Max 101 Min 50 Mean 79.2 Ac-ft 57,330

* Discharge measurement made on this day.

Cultus Creek above Crane Prairie Reservoir, near Lapine, Oreg.

Location.--Lat 43°49'30", long. 121°49'30", in SW¼ sec. 19, T. 20 S., R. 8 E., on left bank 1,000 ft upstream from highway bridge, three-quarters of a mile downstream from outlet of Cultus Lake, and 19 miles northwest of Lapine.

Drainage area.--33.2 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--March to September 1924 and October 1949 to September 1953 in reports of Geological Survey. Prior to October 1949, published as Cultus Creek above Crane Prairie, near Lapine. May 1923 to September 1924 and November 1937 to September 1941 in reports of State engineer. October 1941 to September 1949 in files of State engineer.

Gage.--Water-stage recorder. Altitude of gage is 4,545 ft (by barometer). Prior to Mar. 11, 1924, staff gages on two branches of stream at sites 1½ miles downstream at different datums. Mar. 11 to Sept. 30, 1924, staff gages at site 100 ft upstream at different datum.

Average discharge.--15 years (1938-53), 22.1 cfs.

Extremes.--Maximum discharge during year, 118 cfs June 18 (gage height, 2.02 ft); minimum, 0.2 cfs Oct. 15 to Nov. 12.
1937-53: Maximum discharge, 214 cfs June 1, 1943 (gage height, 2.72 ft); maximum gage height, 2.76 ft June 15, 1950 (backwater from trees); no flow at times.

Remarks.--Records good except those for periods of no gage-height record, which are poor. No diversion or regulation above station.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 18				June 19 to Sept. 30			
0.36	0.2	0.8	8.5	0.6	2.2	1.2	27
.4	.3	1.0	16	.7	5.0	1.5	52
.5	1.0	1.2	27	.8	8	2.1	129
.6	2.5	1.5	54	1.0	16		
.7	5.0	2.1	129				

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.5	0.2	20	13	36	37	18	24	87	84	25	11
2	1.2	.2	22	13	39	36	18	25	88	83	23	10
3	1.1	.2	21	13	46	35	18	25	88	82	23	10
4	1.0	.2	20	13	51	33	17	25	87	79	22	9.6
5	.9	.2	17	13	62	32	17	26	86	78	22	9.2
6	.8	.2	14	13	69	31	17	29	92	77	21	8.8
7	.7	.2	14	13	75	30	16	31	98	75	20	8.8
8	.8	.2	14	15	80	29	16	34	104	*75	20	8.0
9	.7	.2	13	15	77	28	16	36	109	73	19	7.7
10	.5	.2	16	15	75	27	16	38	*115	72	18	7.7
11	.5	.2	18	15	72	27	15	38	115	69	*18	7.4
12	.4	.2	16	15	68	26	15	40	115	68	16	7.1
13	.4	.5	14	15	66	25	14	40	115	67	16	6.8
14	.3	1.2	14	15	65	25	14	41	115	64	15	6.5
15	.2	2.0	14	15	64	24	14	43	115	*62	15	*6.2
16	*.2	2.1	14	15	61	23	13	44	115	59	15	5.9
17	.2	2.3	14	20	62	23	13	46	115	56	14	5.6
18	.2	2.5	14	25	63	22	13	49	116	53	14	5.0
19	.2	2.3	14	33	59	22	13	63	116	51	13	4.7
20	.2	2.3	14	38	54	21	13	73	115	47	13	4.4
21	.2	2.3	14	37	51	21	13	86	115	45	12	4.1
22	.2	2.3	12	36	48	20	13	89	112	43	12	4.1
23	.2	3.9	12	35	46	20	14	91	109	41	11	3.5
24	.2	6	12	35	45	20	14	89	107	39	10	3.2
25	.2	8	12	35	43	20	14	87	104	37	10	2.9
26	.2	11	12	35	41	19	15	87	102	36	12	2.6
27	.2	14	12	35	40	19	18	86	98	33	12	2.4
28	.2	14	12	35	38	19	20	83	94	31	11	2.2
29	.2	14	12	*35	-	18	21	82	91	30	12	2.2
30	.2	14	13	35	-	18	23	82	88	29	12	2.2
31	.2	-	13	35	-	*18	-	83	-	26	11	-
Total	14.2	107.1	453	730	1,595	768	471	1,715	3,126	1,764	487	179.8
Mean	0.46	3.57	14.6	23.5	57.0	24.8	15.7	55.3	104	56.9	15.7	5.99
Ac-ft	28	212	899	1,450	3,160	1,520	934	3,400	6,200	3,500	966	357

Calendar year 1952: Max 149 Min 0.2 Mean 28.6 Ac-ft 20,730
Water year 1952-53: Max 116 Min 0.2 Mean 31.3 Ac-ft 22,630

* Discharge measurement made on this day.

Note.--No gage-height record Nov. 16, 17, 24, 25, Dec. 19-31, Jan. 3-28, Feb. 23 to Mar. 30; discharge estimated on basis of records for Odell Creek near Crescent and Deer Creek above Crane Prairie Reservoir, near Lapine.

Deer Creek above Crane Prairie Reservoir, near Lapine, Oreg.

Location.--Lat 43°48'20", long. 121°50'20", in NW¼NW¼ sec. 36, T. 20 S., R. 7 E., on right bank 150 ft downstream from highway bridge, 1¼ miles downstream from outlet of Little Cultus Lake, and 19 miles northwest of Lapine.

Drainage area.--21.5 sq mi.

Records available.--October 1923 to September 1924 and October 1949 to September 1953 in reports of Geological Survey. Prior to October 1949, published as Deer Creek above Crane Prairie, near Lapine. October 1923 to July 1924 and December 1937 to September 1941 in reports of State engineer January to September 1925 and October 1941 to September 1949 in files of State engineer.

Gage.--Water-stage recorder and log control. Altitude of gage is 4,520 ft (by barometer). Prior to Oct. 1, 1925, staff gage at site 75 ft upstream at various datums. Dec. 1, 1937, to September 1938 water-stage recorder at highway bridge 150 ft upstream at different datum.

Average discharge.--15 years (1938-53), 7.59 cfs.

Extremes.--Maximum discharge during year, 58 cfs June 7 (gage height, 1.60 ft); minimum recorded, 0.2 cfs for many days in period October to January.
1923-25, 1937-53: Maximum discharge, 97 cfs Nov. 30, 1942 (gage height, 1.95 ft); maximum gage height, 2.83 ft Jan. 28, 1951 (ice jam); no flow at times.

Remarks.--Records good except those for periods of ice effect or no gage-height record and those below 1 cfs, which are poor. No diversion or regulation above station.

Rating table, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.2	0.1	0.7	7.2
.3	.3	1.0	17
.4	1.2	1.3	33
.5	2.8	1.6	58

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	0.2	0.6	0.2	10	7.8	5.8	24	35	16	1.0	0.6
2	.4	.2	.6	.3	12	7.5	5.5	22	37	15	.8	.6
3	.4	.2	.6	.3	16	7.2	5.5	22	35	14	.8	.6
4	.4	.2	.6	.3	18	6.7	5.5	22	34	12	.8	.6
5	.4	.2	.5	.3	24	6.5	5.8	23	34	12	.8	.6
6	.4	.2	.5	.3	28	6.2	6.0	25	35	11	1.0	.6
7	.3	.2	.5	.4	31	6.2	6.0	28	43	11	.8	.6
8	.3	.2	.4	.4	33	6.2	6.2	29	57	*10	.8	.6
9	.3	.2	.4	.4	32	6.2	6.2	29	56	9.7	.8	.6
10	.3	.2	.4	.4	31	6.2	6.2	28	*53	8.6	.6	.6
11	.3	.3	.4	1	28	6.2	6.2	28	47	8.0	*.8	.6
12	.3	.4	.4	2	26	6.2	6.2	26	45	7.0	.8	.6
13	.3	.4	.4	3	24	b6.2	6.2	26	42	6.5	.6	.6
14	.3	.5	.4	4	21	b6.2	6.0	26	42	5.8	.6	.6
15	.3	.5	.4	4.5	19	6.0	5.8	27	39	*5.0	.6	*.6
16	*.3	.5	.3	5	18	6.2	5.8	28	39	4.4	.6	.6
17	.3	.6	.3	9	17	6.5	6.0	29	38	4.0	.6	.6
18	.3	.6	.3	12	b16	6.2	6.0	32	37	3.6	.6	.5
19	.4	.6	.3	15	15	6.5	6.5	40	36	3.2	.6	.5
20	.4	.6	.3	17	13	6.5	7.0	48	35	2.6	.6	.4
21	.3	.6	.3	16	b12	6.7	7.2	55	33	2.2	.6	.4
22	.3	.8	.3	15	11	7.0	7.2	52	31	2.0	.6	.4
23	.2	.8	.3	14	11	6.7	7.5	47	29	1.9	.6	.4
24	.2	.8	.2	13	9.7	6.5	7.5	43	27	1.8	.6	.4
25	.3	.8	.2	12	b9.4	6.2	7.8	40	26	1.4	.6	.3
26	.3	.8	.2	11	8.9	6.0	9.7	38	24	1.4	.6	.3
27	.3	.8	.2	10	8.3	6.0	18	36	22	1.2	.6	.3
28	.3	.8	.2	9.5	8.0	6.0	24	34	20	1.1	.6	.3
29	.2	.8	.2	*9.2	-	5.8	24	33	18	1.0	.6	.3
30	.2	.6	.2	9.4	-	5.8	25	32	17	1.0	.6	.3
31	.2	-	.2	9.4	-	*6.0	-	33	-	1.0	.6	-
Total	9.6	14.6	11.1	204.3	510.3	198.1	258.3	1,005	1,066	185.4	21.2	15.0
Mean	0.31	0.49	0.36	6.59	18.2	6.39	8.61	32.4	35.5	5.98	0.68	0.50
Ac-ft	19	29	22	405	1,010	393	512	1,990	2,110	368	42	30

Calendar year 1952: Max 68 Min 0.2 Mean 8.82 Ac-ft 6,400
Water year 1952-53: Max 57 Min 0.2 Mean 9.59 Ac-ft 6,930

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Jan. 5-7, 11-28, Aug. 23 to Sept. 14, Sept. 23-30; discharge estimated on basis of records for Odell Creek near Crescent.

Quinn River near Lapine, Oreg.

Location.--Lat 43°47'10", long. 121°50'10", in NW¼ sec. 1, T. 21 S., R. 7 E., on left bank just upstream from flow line of Crane Prairie Reservoir, 150 ft downstream from springs at head of river and 19 miles northwest of Lapine.

Records available.--June 1922 to September 1925, November 1937 to September 1953.

Gage.--Water-stage recorder and log control. Datum of gage is 4,442.1 ft above mean sea level, based on elevation of Crane Prairie Reservoir when slack water reached station. June 1, 1922, to Sept. 30, 1925, staff gage at site 200 ft downstream at different datum. Nov. 1, 1937, to Sept. 13, 1938, water-stage recorder at present site and datum and natural control.

Average discharge.--18 years (1923-25, 1938-53), 22.7 cfs.

Extremes.--Maximum discharge during year, 47 cfs Aug. 7, 8, 19-28; maximum gage height, 3.33 ft June 11 (backwater from reservoir); minimum discharge, 19 cfs Dec. 26.
1922-25, 1937-53: Maximum discharge, 59 cfs July 4, 1949; maximum gage height, 3.66 ft May 22, 1952; practically no flow Nov. 14, 1941.

Remarks.--Records fair. No diversion or regulation above station.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	32	30	20	24	25	27	31	36	44	45	45
2	38	31	30	20	24	25	27	31	36	44	45	45
3	38	31	30	20	24	25	27	31	37	45	45	44
4	38	30	28	20	24	25	27	31	37	45	45	42
5	38	*30	27	20	24	25	27	31	37	45	45	40
6	38	30	27	20	24	26	27	31	37	46	45	40
7	38	30	27	20	24	26	28	31	37	46	47	40
8	38	30	26	20	24	26	28	31	38	*46	47	40
9	38	30	26	20	24	26	28	31	38	46	45	40
10	38	30	24	20	24	26	28	31	*38	46	45	40
11	38	30	24	20	24	26	28	*31	38	46	*45	40
12	38	30	24	20	24	26	28	31	38	46	45	40
13	38	30	23	20	24	26	28	31	39	46	45	40
14	38	30	23	22	24	26	29	32	39	46	45	40
15	38	30	22	22	24	26	29	32	39	46	45	*40
16	38	30	22	22	25	26	29	32	39	46	45	40
17	38	30	22	22	25	26	29	32	40	46	45	42
18	38	30	22	22	25	26	29	33	40	45	45	42
19	38	30	22	22	25	26	29	33	40	45	47	42
20	*38	30	22	22	25	26	29	33	41	45	47	42
21	38	30	22	22	25	27	29	33	41	45	47	42
22	37	30	22	23	25	27	29	34	41	45	47	42
23	37	30	20	23	25	27	30	34	41	45	47	42
24	36	30	20	23	25	27	30	34	42	45	47	42
25	36	30	20	23	25	27	30	34	42	45	47	42
26	35	30	20	23	25	27	30	35	42	45	47	41
27	35	30	20	23	25	27	30	35	43	45	47	41
28	34	30	20	24	25	27	30	35	43	45	47	41
29	34	30	20	*24	-	27	30	35	43	45	45	41
30	33	30	20	24	-	27	30	36	44	45	45	41
31	33	-	20	24	-	*27	-	36	-	45	45	-
Total	1,148	904	725	670	685	812	859	1,011	1,186	1,405	1,419	1,239
Mean	37.0	30.1	23.4	21.6	24.5	26.2	28.6	32.6	39.5	45.3	45.8	41.3
Ac-ft	2,280	1,790	1,440	1,330	1,360	1,610	1,700	2,010	2,350	2,790	2,810	2,460

Calendar year 1952: Max 51 Min 18 Mean 32.8 Ac-ft 23,770
Water year 1952-53: Max 47 Min 20 Mean 33.0 Ac-ft 23,930

* Discharge measurement made on this day.
Note.--No gage-height record Nov. 23 to Dec. 1; discharge interpolated. Backwater from Crane Prairie Reservoir Oct. 1 to Nov. 22, Feb. 6 to July 29, Sept. 20-30; discharge interpolated.

Charlton Creek above Crane Prairie Reservoir, near Lapine, Oreg.

Location.--Lat 43°47'00", long. 121°50'00", in NE¼SW¼ sec. 1, T. 21 S., R. 7 E., on left bank 3 miles northwest of Crane Prairie Dam and 18 miles northwest of Lapine.

Drainage area.--15.6 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--October 1949 to September 1953 in reports of Geological Survey. May 1923 to May 1924 and October 1937 to September 1941 in reports of State engineer. October 1941 to September 1949 in files of State engineer.

Gage.--Water-stage recorder. Datum of gage is 4,458.70 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 1, 1923, to May 23, 1924, staff gage at about same site at different datum.

Extremes.--Maximum discharge during year, 30 cfs about May 21 (gage height, 1.32 ft); no flow at times.
1923-24, 1937-53: Maximum discharge, 54 cfs June 12, 1950 (gage height, 1.53 ft), from rating curve extended above 17 cfs; maximum gage height, 2.17 ft about Jan. 28, 1951 (ice jam); no flow at times.

Remarks.--Records fair except those for periods of no gage-height record, which are poor. No diversion or regulation above station.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								0.1	11	7.3		
2								.5	12	6.9		
3								1	14	7.3		
4								2	13	6.9		
5								3	14	6.3		
6								4	15	6.3		
7								5	17	6.3		
8								5.5	20	*6.6		
9								6	18	5.7		
10								7	*17	4.5		
11								*7.3	18	3.9		
12								7.9	19	3.2		
13								9.0	18	2.5		
14								9.6	17	1.6		
15								9.6	18	*1.1		
16								10	17	.1		
17								14	17	0		
18								17	20	0		
19								18	18	0		
20								20	14	0		
21								21	14	0		
22								20	14	0		
23								18	13	0		
24								17	11	0		
25								16	10	0		
26								15	9.0	0		
27								14	8.5	0		
28								12	7.9	0		
29								11	9.0	0		
30								10	7.9	0		
31								10	-	0		
Total								320.5	431.3	76.5	0	0
Mean								10.3	14.4	2.47	0	0
Ac-ft								636	855	152	0	0

Calendar year	: Max	Min	Mean	Ac-ft
Water year	: Max	Min	Mean	Ac-ft

* Discharge measurement made on this day.

Note.--No gage-height record May 1-10, May 19 to June 9; discharge estimated on basis of notes by watermaster, recorded range in stage, and records for Deer Creek above Crane Prairie Reservoir near Lapine. No record obtained Oct. 1 to Apr. 30, but little, if any, flow occurred during this period.

Deschutes River below Crane Prairie Reservoir, near Lapine, Oreg.

Location.--Lat 43°45'10", long. 121°46'50", in NW¼ sec. 16, T. 21 S., R. 8 E., on left bank 600 ft downstream from Crane Prairie Dam and 15 miles northwest of Lapine.

Drainage area.--254 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--January 1914 to June 1917, February 1922 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 4,415 ft (by barometer). Prior to June 9, 1922, staff gage at site half a mile upstream at different datum. June 9, 1922, to May 9, 1932, staff gage or water-stage recorder at present site and datum.

Average discharge.--32 years (1914-15, 1922-53), 195 cfs.

Extremes.--Maximum discharge during year, 1,040 cfs Nov. 5 (gage height, 3.14 ft); minimum, 23 cfs Dec. 10 (gage height, 0.49 ft).
1914-17, 1922-53: Maximum discharge, 1,170 cfs July 28, 1947 (gage height, 3.34 ft); minimum, 2 cfs Dec. 21, 1940, Nov. 1, 1942, June 13-25, 1948.

Remarks.--Records good. No diversion above station. Flow regulated since Nov. 4, 1922, by Crane Prairie Reservoir (see p. 61).

Revisions (water years).--WSP 1218: Drainage area.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to May 25				May 26 to Sept. 30			
0.5	24	2.0	435	0.6	37	2.0	417
.7	52	2.5	655	1.0	104	2.5	650
1.0	104	3.0	945	1.5	236		
1.5	245						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	225	142	716	34	38	40	87	87	323	312	482	*460
2	225	142	705	34	38	40	87	87	323	312	478	460
3	219	142	705	34	38	40	87	87	323	312	478	460
4	212	144	700	34	38	40	89	*87	319	309	478	460
5	212	359	695	34	38	40	89	87	319	309	473	460
6	212	868	690	34	40	40	89	89	319	309	473	456
7	212	868	690	36	40	40	89	89	323	309	473	456
8	*295	862	685	36	40	40	89	87	323	*309	473	456
9	351	856	680	36	40	40	89	87	330	309	469	456
10	347	856	435	36	40	40	89	87	334	309	469	253
11	347	850	34	36	40	40	89	100	334	309	469	50
12	347	844	34	36	40	40	89	169	*334	305	469	50
13	343	838	33	36	40	40	89	169	334	305	469	50
14	294	832	33	36	40	40	89	169	334	305	469	50
15	245	826	33	36	40	40	89	169	334	*305	469	*50
16	166	820	33	36	38	40	89	169	334	305	469	49
17	136	814	33	36	38	91	99	169	330	402	469	49
18	136	808	33	37	40	147	89	169	330	495	*469	49
19	136	802	33	37	40	147	89	*169	327	495	464	49
20	136	790	33	37	40	147	89	172	327	495	464	49
21	136	784	33	37	40	147	87	175	327	491	460	49
22	136	778	33	37	40	147	89	178	323	491	460	49
23	136	778	33	37	40	147	87	181	323	491	460	49
24	139	*766	34	37	40	147	87	184	323	491	460	48
25	139	760	34	37	40	147	87	228	319	486	456	48
26	139	749	34	37	40	144	87	327	319	486	456	48
27	139	744	34	37	40	142	87	330	316	486	456	48
28	139	732	34	*37	40	142	87	330	316	482	456	48
29	142	727	36	37	-	142	87	327	312	*482	456	48
30	142	722	34	38	-	131	87	323	*312	482	456	48
31	142	-	34	38	-	*87	-	323	-	482	456	-
Total	6,325	21,003	7,406	1,120	1,106	2,695	2,646	5,404	9,744	12,170	14,458	5,355
Mean	204	700	239	36.1	39.5	86.9	88.2	174	325	393	466	178
Ac-ft	12,550	41,660	14,690	2,220	2,190	5,350	5,250	10,720	19,330	24,140	28,680	10,620

Calendar year 1952: Max 868 Min 33 Mean 252 Ac-ft 182,600
Water year 1952-53: Max 868 Min 33 Mean 245 Ac-ft 177,400

* Discharge measurement made on this day.

Brown Creek near Lapine, Oregon

Location.--Lat 43°43'30", long. 121°48'40", in SE¼NE¼ sec. 30, T. 21 S., R. 8 E., on left bank 1½ miles upstream from mouth and 15 miles northwest of Lapine.

Drainage area.--19.7 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--May 1922 to September 1925 and October 1949 to September 1953 in reports of Geological Survey. May 1922 to September 1925, November 1925 to October 1927 (discharge measurements only), and June 1938 to September 1941 in reports of State engineer. October 1941 to September 1949 (discharge measurements only, October 1945 to September 1946) in files of State engineer.

Gage.--Water-stage recorder. Altitude of gage is 4,375 ft (by barometer). May 24, 1922, to Oct. 11, 1927, staff gage and June 17, 1938, to Nov. 1, 1945, water-stage recorder at site 1¼ miles downstream at different datum.

Average discharge.--17 years (1922-25, 1938-45, 1946-53), 37.6 cfs.

Extremes.--Maximum discharge during year, 63 cfs Aug. 26 (gage height, 1.46 ft); minimum daily, 46 cfs Jan. 26 to Mar. 2.
1922-25, 1938-45, 1946-53: Maximum discharge, 87 cfs Oct. 28, 1950; maximum gage height, that of Aug. 26, 1953; minimum discharge, 16 cfs July 22-25, 1941, and at times December 1941 to March 1942.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No diversion or regulation above station.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from aquatic vegetation July 23 to Aug. 15)

1.2	45
1.4	66

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	60	56	50	46	46	47	50	53	52	54	59
2	60	60	56	50	46	46	47	48	53	52	55	59
3	60	60	56	50	46	47	48	48	52	52	55	59
4	60	60	56	50	46	47	49	*48	52	52	55	59
5	60	*60	56	49	46	47	50	48	52	51	55	59
6	60	60	55	49	46	47	50	48	53	51	56	59
7	60	60	55	49	46	47	49	48	54	50	56	60
8	60	60	55	49	46	47	48	49	54	*50	56	59
9	60	60	55	49	46	47	47	49	54	50	56	59
10	60	60	55	49	46	47	47	49	*55	50	56	59
11	60	60	54	48	46	47	47	50	55	51	56	59
12	60	60	54	48	46	47	47	49	55	52	56	59
13	60	60	54	48	46	47	47	50	55	53	56	59
14	60	60	54	48	46	47	47	49	56	53	56	59
15	60	60	54	48	46	47	47	50	55	*53	57	*59
16	60	60	53	48	46	47	48	50	54	53	58	59
17	*60	59	53	48	46	47	48	50	54	53	58	59
18	60	59	53	47	46	47	49	50	54	53	58	59
19	60	59	53	47	46	47	50	50	54	53	58	59
20	60	59	53	47	46	47	51	51	54	53	58	59
21	60	59	52	47	46	47	52	52	54	53	58	59
22	60	58	52	47	46	47	53	52	54	53	58	59
23	60	58	52	47	46	47	52	52	54	53	58	59
24	60	58	52	47	46	47	51	52	54	53	58	59
25	60	58	52	47	46	47	51	52	53	53	58	59
26	60	57	51	46	46	47	51	52	53	53	60	59
27	60	57	51	46	46	47	51	52	53	53	59	59
28	60	57	51	46	46	47	51	52	53	53	59	59
29	60	57	51	*46	-	47	50	53	53	*53	59	59
30	60	57	51	46	-	47	50	52	52	53	59	59
31	60	-	50	46	-	*47	-	52	-	53	59	-
Total	1,860	1,772	1,655	1,482	1,288	1,455	1,475	1,557	1,610	1,620	1,770	1,771
Mean	60.0	59.1	53.4	47.8	46.0	46.9	49.2	50.2	53.7	52.3	57.1	59.0
Ac-ft	3,690	3,510	3,280	2,940	2,550	2,890	2,930	3,090	3,190	3,210	3,510	3,510

Calendar year 1952: Max 64 Min 45 Mean 55.3 Ac-ft 40,090
Water year 1952-53: Max 60 Min 46 Mean 52.9 Ac-ft 38,300

* Discharge measurement made on this day.
Note.--No gage-height record Nov. 28 to Jan. 28, Feb. 2 to Mar. 30; discharge interpolated.

Odell Creek near Crescent, Oreg.

Location.--Lat 43°32'50", long. 121°57'40", in SW¼ sec. 25, T. 23 S., R. 6 E., on left bank 1,000 ft below outlet of Odell Lake, 3½ miles north of Crescent Lake, and 14 miles northwest of Crescent.

Drainage area.--39.0 sq mi.

Records available.--August 1911 to August 1914 (incomplete), December 1923 to June 1924, May 1933 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 4,778.83 ft above mean sea level, datum of 1929.

Average discharge.--20 years (1933-53), 78.9 cfs.

Extremes.--Maximum discharge during year, 244 cfs Jan. 20; maximum gage height, 1.02 ft Feb. 7; minimum discharge, 51 cfs Sept. 26, 27, 28, 29, 30.
1911-14, 1923-24, 1933-53: Maximum discharge, 405 cfs Dec. 30, 1945 (gage height, 1.37 ft), from rating curve extended above 190 cfs; maximum gage height, 2.03 ft Jan. 5, 1947 (ice jam); minimum discharge recorded, 10 cfs Mar. 4, 5, 1951 (caused by ice jamming at outlet of lake).

Remarks.--Records good. Flow affected occasionally by ice jams in winter and at other times by debris which collects on fish racks or by boards used at outlet of Odell Lake to regulate lake levels; slightly affected at times by seiches on Odell Lake.

Revisions (water years).--WSP 794: 1933-34.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 20		Jan. 21 to Sept. 30	
0.3	31	0.4	46
.5	86	.7	132
1.0	252	1.0	232

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66	54	63	98	*129	99	82	120	141	132	73	82
2	66	54	72	101	135	96	79	120	141	126	73	79
3	66	54	74	98	158	93	76	117	141	126	70	*73
4	63	54	77	95	167	87	73	114	141	126	70	73
5	63	54	83	92	190	84	79	*114	141	126	70	73
6	63	57	98	92	215	82	82	114	148	126	76	73
7	66	57	119	101	218	79	73	120	158	*132	*76	73
8	63	57	128	122	225	79	70	126	164	135	73	70
9	63	54	125	144	215	76	73	129	167	135	73	70
10	60	*57	138	141	197	76	70	126	167	132	70	67
11	60	60	141	138	187	79	73	123	167	132	70	67
12	60	66	135	141	173	79	73	120	167	129	70	67
13	57	77	128	144	164	82	73	117	167	129	70	67
14	57	80	125	141	161	79	70	117	167	129	70	67
15	57	77	116	138	155	79	*67	117	167	126	82	67
16	57	74	*113	138	151	82	67	114	*164	123	79	67
17	57	72	110	147	164	87	67	114	164	117	76	62
18	57	*69	107	194	176	90	65	120	167	114	76	62
19	57	69	104	218	161	93	67	138	167	111	76	59
20	57	66	104	237	155	102	67	148	164	108	73	59
21	*57	66	104	208	144	111	67	155	164	105	70	59
22	57	63	107	201	138	114	73	155	161	102	67	59
23	57	60	101	187	129	108	76	155	151	96	67	56
24	57	60	95	173	123	105	76	151	148	93	65	54
25	57	57	92	167	117	102	79	148	141	87	65	54
26	57	57	92	164	*111	96	84	151	141	87	82	54
27	57	54	92	151	105	93	99	151	135	84	84	51
28	57	54	92	144	105	93	108	148	135	82	82	54
29	57	54	92	141	-	87	114	141	135	79	87	51
30	57	52	95	135	-	87	120	141	132	76	84	51
31	57	-	92	129	-	84	-	141	-	73	82	-
Total	1,842	1,839	3,214	4,520	4,468	2,783	2,342	4,065	4,613	3,478	2,301	1,920
Mean	59.4	61.3	104	146	160	89.8	78.1	131	154	112	74.2	64.0
Cfsm	1.52	1.57	2.67	3.74	4.10	2.30	2.00	3.36	3.95	2.87	1.90	1.64
In.	1.76	1.75	3.06	4.31	4.26	2.65	2.23	3.88	4.40	3.32	2.19	1.83
Ac-ft	3,650	3,650	6,370	8,970	8,860	5,520	4,650	8,060	9,150	6,900	4,560	3,810

Calendar year 1952: Max 225 Min 52 Mean 107 Cfsm 2.74 In. 37.21 Ac-ft 77,410
Water year 1952-53: Max 237 Min 51 Mean 102 Cfsm 2.62 In. 35.64 Ac-ft 74,150

* Discharge measurement made on this day.

Deschutes River below Wickiup Reservoir, near Lapine, Oreg.

Location.--Lat 43°41'20", long. 121°41'00", in NE¼ sec. 7, T. 22 S., R. 9 E., on left bank 2,000 ft downstream from Wickiup Dam and 9 miles west of Lapine.

Drainage area.--483 sq mi.

Records available.--June 1938 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 4,257.41 ft above mean sea level (levels by Bureau of Reclamation).

Average discharge.--15 years, 721 cfs.

Extremes.--Maximum discharge during year, 2,090 cfs Aug. 4 (gage height, 7.51 ft); minimum, about 10 cfs Sept. 1, 2, 9, 18, when gate was closed for outlet inspection.
1938-53: Maximum discharge, 2,220 cfs Sept. 8, 9, 1951 (gage height, 7.79 ft); minimum, about 10 cfs Oct. 20, 1948, Sept. 1, 2, 9, 18, 1953, when gate was closed for outlet inspection.
Revisions.--The minimum discharge for the water year 1949 has been revised to about 10 cfs Oct. 20, 1948, superseding figure published in WSP 1154.

Remarks.--Records good. Flow regulated by Crane Prairie Reservoir, and since Dec. 24, 1942, by Wickiup Reservoir (see p. 61).

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.4	44	3.0	370
1.5	56	5.0	1,020
2.0	127	7.0	1,860
2.5	232	7.5	2,080

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,230	190	51	52	64	180	484	595	553	1,770	2,080	1,190
2	1,190	132	51	55	66	180	*484	598	556	1,760	2,080	1,170
3	1,150	131	51	51	66	180	*484	598	556	1,760	2,080	1,410
4	1,110	89	51	51	66	180	484	607	556	1,760	2,080	1,410
5	1,090	89	54	49	67	180	484	634	556	1,750	*1,990	1,410
6	1,070	91	54	51	*67	180	484	802	559	1,750	1,860	1,420
7	1,060	95	54	50	68	180	484	798	559	1,750	1,860	1,420
8	1,060	98	54	51	69	182	484	844	553	1,830	1,850	1,420
9	1,100	98	56	51	69	182	487	1,010	553	1,900	1,850	1,070
10	1,130	101	56	49	68	182	490	1,000	553	1,900	1,860	1,410
11	1,150	92	56	49	68	182	490	1,000	556	1,900	1,790	1,410
12	1,150	95	56	51	69	182	490	1,100	*556	1,890	1,670	1,410
13	1,160	95	51	52	69	182	490	1,180	556	*1,890	1,670	1,410
14	*1,160	89	51	54	71	184	490	1,180	556	1,890	1,680	1,410
15	1,140	51	51	54	71	182	490	1,130	556	1,890	1,690	1,400
16	*1,100	51	51	56	71	182	493	1,060	634	1,910	1,690	1,400
17	1,040	51	51	60	71	*182	493	1,060	973	1,950	1,690	1,400
18	928	51	51	66	71	182	493	1,060	1,230	1,980	*1,700	1,230
19	794	51	51	62	155	184	526	1,060	1,270	2,000	1,700	1,390
20	763	51	51	62	280	184	565	1,060	1,390	2,000	1,700	1,390
21	685	51	51	62	277	186	565	1,060	1,390	1,990	1,700	*1,390
22	682	51	51	62	274	188	556	1,060	*1,430	2,020	1,690	1,390
23	667	51	51	63	272	190	*622	1,070	1,500	2,080	1,690	1,390
24	667	51	51	63	*235	188	710	1,070	1,640	2,080	1,690	1,390
25	664	54	51	63	180	186	777	1,000	1,780	2,080	1,680	1,390
26	649	54	51	62	180	186	777	850	1,780	2,070	1,680	1,390
27	658	54	51	62	180	222	774	738	1,770	2,070	1,680	1,390
28	607	54	51	63	180	460	770	580	1,770	2,070	1,680	1,380
29	568	54	51	64	-	478	738	550	1,770	*2,080	1,680	1,380
30	550	51	50	64	-	481	592	547	*1,770	2,070	1,680	1,280
31	475	-	*50	64	-	481	-	550	-	2,060	1,570	-
Total	28,447	2,316	1,611	1,768	3,444	6,878	16,750	27,451	30,431	59,900	54,990	40,950
Mean	918	77.2	52.0	57.0	123	222	558	886	1,014	1,932	1,774	1,365
Ac-ft	56,420	4,590	3,200	3,510	6,830	13,640	33,220	54,450	60,360	118,800	109,100	81,220

Calendar year 1952: Max 2,150 Min 10 Mean 924 Ac-ft 671,100
Water year 1952-53: Max 2,080 Min 49 Mean 753 Ac-ft 545,300

* Discharge measurement made on this day.

Fall River near Lapine, Oreg.

Location.--Lat 43°47'50", long. 121°34'20", in SE¼ sec. 31, T. 20 S., R. 10 E., on left bank 50 ft downstream from spillway from ponds at State fish hatchery and 9 miles northwest of Lapine.

Drainage area.--45.1 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange.

Records available.--May to September 1912 (fragmentary) and June 1938 to September 1953 in reports of Geological Survey. October 1923 to September 1924 and July 1938 to September 1941 in reports of State engineer.

Gage.--Water-stage recorder. Altitude of gage is 4,220 ft (by barometer). May 13 to Sept. 15, 1912, and Oct. 1, 1923, to Sept. 30, 1924, staff gages at two sites within 3½ miles downstream at different datums.

Average discharge.--15 years (1938-53), 146 cfs.

Extremes.--Maximum discharge during year, 229 cfs Aug. 16 (gage height, 1.83 ft); minimum, 172 cfs Nov. 25.
1938-53: Maximum discharge, 250 cfs July 28, 1952 (gage height, 1.94 ft); minimum, 68 cfs Apr. 6, 1942.

Remarks.--Records good. Water diverted above station only to ponds at fish hatcheries, from which water returns to river above station. Momentary extremes are caused by operation of fish hatchery.

Revisions (water years).--WSP 984: 1938-42(M,m).

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.5	167
1.8	223

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	204	196	180	192	185	181	183	194	200	204	204	202
2	204	196	180	191	187	181	185	196	200	204	204	202
3	204	196	180	191	189	181	*185	196	200	204	204	204
4	204	194	181	191	187	181	185	198	200	204	204	204
5	204	194	183	190	189	181	185	200	200	204	204	204
6	204	194	187	190	187	181	185	202	200	202	204	206
7	204	194	189	190	187	181	185	206	200	202	204	206
8	204	194	189	190	185	181	185	208	200	202	204	208
9	204	194	191	189	185	181	185	210	202	202	204	208
10	202	196	191	189	183	181	183	210	202	202	204	208
11	200	196	191	189	183	181	183	210	202	204	*204	208
12	200	196	191	189	181	181	181	210	202	204	204	210
13	198	196	191	188	181	181	181	210	202	204	204	210
14	*196	196	193	188	181	183	181	210	202	*206	204	210
15	196	196	193	188	180	183	181	212	202	206	204	210
16	196	194	193	188	180	183	180	210	202	*204	202	212
17	196	194	193	187	180	183	180	208	202	204	202	212
18	196	193	194	187	180	183	180	206	202	204	202	212
19	196	191	*194	187	180	183	180	206	202	204	202	212
20	196	189	194	187	180	183	180	202	202	204	202	212
21	196	187	194	186	180	183	181	*200	202	204	202	212
22	196	185	194	186	180	183	181	200	202	204	202	210
23	196	183	193	186	180	183	181	200	202	204	202	208
24	198	181	193	186	180	183	183	200	*202	204	202	206
25	198	180	193	185	180	183	185	200	202	204	202	204
26	198	180	193	185	180	183	187	200	202	204	202	202
27	198	178	193	*185	*180	183	189	200	202	204	202	200
28	198	178	193	185	180	183	189	200	204	204	202	200
29	198	178	192	185	-	183	191	200	204	204	202	198
30	198	178	192	185	-	183	193	200	204	204	202	198
31	196	-	192	185	-	183	-	200	-	204	*202	-
Total	6,178	5,697	5,900	5,820	5,110	5,647	5,513	6,304	6,050	6,318	6,292	6,198
Mean	199	190	190	188	183	182	184	203	202	204	203	207
Ac-ft	12,250	11,300	11,700	11,540	10,140	11,200	10,930	12,500	12,000	12,530	12,480	12,290

Calendar year 1952: Max 234 Min 178 Mean 200 Ac-ft 145,100
Water year 1952-53: Max 212 Min 178 Mean 195 Ac-ft 140,900

* Discharge measurement made on this day.
Note.--No gage-height record Dec. 27 to Jan. 26; discharge interpolated.

Crescent Creek at Crescent Lake, near Crescent, Oreg.

Location.--Lat 43°30'00", long. 121°58'20", in sec. 11, T. 24 S., R. 6 E., on right bank 300 ft downstream from dam at outlet of Crescent Lake and 14 miles west of Crescent.

Drainage area.--60.7 sq mi.

Records available.--January 1911 to July 1915, July 1927 to September 1953.

Gage.--Water-stage recorder and Parshall flume. Datum of gage is 4,826.72 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Jan. 11, 1911, to July 31, 1915, staff gages near present site at different datums. July 19, 1927, to June 1936, water-stage recorder near present site at different datum.

Average discharge.--28 years (1911-14, 1928-53), 48.5 cfs.

Extremes.--Maximum discharge during year, 225 cfs July 20-22 (gage height, 2.67 ft); minimum, 22 cfs Oct. 28 to Nov. 4, Nov. 9, 10.
1911-15, 1927-53: Maximum discharge, 313 cfs July 9, 1929, Aug. 9, 1936; no flow at times.

Remarks.--Records good. Flow regulated since 1922 by Crescent Lake (see p. 61), storage being released for diversion below station through Deschutes County Municipal Improvement District Canal at Bend. No diversion above station.

Revisions.--WSP 1218: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.6	21	2.0	142
1.0	47	2.7	229
1.5	89		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	182	22	24	27	64	104	100	96	146	152	213	184
2	181	22	24	27	102	104	100	96	146	152	212	182
3	180	22	24	27	103	103	99	96	146	152	212	181
4	180	22	24	27	103	103	99	118	146	152	210	180
5	178	23	24	27	104	103	98	145	146	152	210	180
6	177	23	24	27	105	103	98	145	146	152	208	180
7	177	23	24	27	106	103	98	145	148	*152	208	180
8	177	23	25	27	106	102	97	145	149	152	207	178
9	176	22	25	27	105	102	97	145	149	152	206	177
10	176	22	25	27	105	101	97	145	150	152	204	177
11	175	23	25	27	105	101	96	145	150	152	203	176
12	172	23	25	28	105	101	96	145	150	152	203	175
13	171	23	25	28	105	101	96	145	150	*152	200	173
14	170	23	25	28	104	101	96	144	151	152	199	173
15	167	23	25	29	104	100	96	144	151	152	199	172
16	166	23	25	30	104	100	96	144	151	152	198	172
17	165	23	25	30	104	100	96	144	152	152	198	171
18	163	23	25	31	104	100	96	144	152	152	196	170
19	161	23	25	31	104	100	96	144	152	152	194	169
20	161	23	26	31	104	100	96	145	152	167	194	167
21	160	23	26	32	104	101	96	145	152	225	193	166
22	159	23	26	32	104	101	96	145	152	225	193	165
23	159	24	26	33	103	101	96	146	152	224	191	164
24	159	24	26	33	103	100	96	146	152	222	190	135
25	159	24	26	34	103	100	96	146	152	222	189	101
26	157	24	27	35	103	100	96	146	152	221	187	101
27	155	24	27	35	103	100	96	146	152	220	187	100
28	84	24	27	35	103	100	96	146	152	219	187	100
29	22	24	27	35	-	100	96	146	152	217	187	99
30	22	24	27	36	-	100	96	146	152	216	187	97
31	22	-	27	36	-	100	-	146	-	215	186	-
Total	4,713	692	786	939	2,872	3,135	2,903	4,324	4,503	5,481	6,151	4,745
Mean	152	23.1	25.4	30.3	103	101	96.8	139	150	177	198	158
Ac-ft	9,350	1,370	1,560	1,860	5,700	6,220	5,760	8,580	8,930	10,870	12,200	9,410

Calendar year 1952: Max 225 Min 22 Mean 117 Ac-ft 84,670
Water year 1952-53: Max 225 Min 22 Mean 113 Ac-ft 81,810

* Discharge measurement made on this day.

Little Deschutes River near Lapine, Oreg.

Location.--Lat 43°41'30", long. 121°30'10", in SW¼ sec. 2, T. 22 S., R. 10 E., on right bank just downstream from bridge at former town of Rosland, 1¼ miles north of Lapine.

Drainage area.--859 sq mi.

Records available.--September 1910 to October 1913 (incomplete), June to November 1918, August to October 1920, May 1924 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 4,192.81 ft above mean sea level, datum of 1929. Sept. 22, 1910, to Aug. 31, 1911, staff gage at present site at different datum. Mar. 1 to Sept. 28, 1912, staff gage at site 1½ miles downstream at different datum. June 1, 1913, to Oct. 28, 1920, staff gage at present site at different datum. May 15, 1924, to Sept. 28, 1928, staff gage and Sept. 29, 1928, to Oct. 14, 1931, water-stage recorder, at datum 1.0 ft higher.

Average discharge.--29 years (1924-53), 182 cfs.

Extremes.--Maximum discharge during year, 761 cfs May 24 (gage height, 6.52 ft); minimum daily, 65 cfs Nov. 30.
1910-13, 1918, 1920, 1924-53: Maximum discharge, 1,320 cfs June 13, 1950 (gage height, 7.25 ft); minimum, 8 cfs Sept. 2, 3, 1931 (gage height, 0.71 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. Diversions for irrigation of about 13,700 acres above station. Flow regulated since August 1922 by Crescent Lake (see following page).

Revisions (water years).--WSP 1218: 1950(M).

Rating tables, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 6 to May 23)

Oct. 1 to May 24				May 25 to Sept. 30	
1.8	59	5.0	450	3.0	173
2.0	77	6.5	755	5.0	448
3.0	180			6.5	755

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	234	103	80	130	270	309	309	708	595	472	302	295
2	232	100	86	135	330	284	307	702	573	470	299	280
3	230	97	90	132	390	290	*310	670	564	451	301	268
4	229	96	96	128	450	291	318	643	554	432	311	262
5	228	96	110	126	540	277	333	623	545	421	323	257
6	227	95	118	*125	*625	298	343	611	548	410	312	254
7	226	95	132	150	668	298	359	631	571	*400	313	253
8	224	93	123	170	680	307	347	665	585	396	308	252
9	224	92	123	170	647	320	326	682	609	380	299	249
10	223	91	137	165	637	331	317	698	643	373	292	242
11	222	95	154	168	609	*334	317	692	670	376	287	241
12	221	*98	154	170	569	326	310	680	662	373	280	240
13	221	104	150	170	502	310	305	653	639	366	274	236
14	218	108	140	180	469	298	303	637	615	360	275	236
15	217	107	135	190	437	292	307	629	605	354	278	235
16	217	103	130	220	416	288	324	629	611	348	276	232
17	215	97	122	270	404	291	343	629	599	342	271	236
18	212	90	118	320	376	291	343	627	577	333	267	237
19	217	86	116	350	354	295	358	625	550	329	266	237
20	217	83	116	380	340	286	378	635	541	306	267	235
21	*216	80	116	370	330	282	394	665	541	301	268	233
22	218	79	118	350	320	288	420	725	548	311	264	230
23	218	77	122	330	310	310	457	748	550	336	261	230
24	214	75	118	310	300	331	498	750	535	337	261	231
25	212	74	110	300	305	341	552	722	513	334	262	228
26	210	72	110	270	310	337	607	718	498	330	284	192
27	209	70	110	255	314	327	639	*718	489	326	312	178
28	208	68	115	240	321	329	662	705	484	320	316	176
29	200	66	120	230	-	322	702	698	480	*315	326	176
30	128	65	125	225	-	318	715	655	475	312	326	176
31	109	-	125	230	-	312	-	615	-	308	*315	-
Total	6,596	2,655	3,719	6,959	12,223	9,513	12,203	20,788	16,969	11,222	8,996	7,027
Mean	213	88.5	120	224	437	307	407	671	566	362	290	234
Ac-ft	13,080	5,270	7,380	13,800	24,240	18,870	24,200	41,230	33,660	22,260	17,840	13,940

Calendar year 1952: Max 1,080 Min 65 Mean 331 Ac-ft 240,100
Water year 1952-53: Max 750 Min 65 Mean 326 Ac-ft 235,800

* Discharge measurement made on this day.
Note.--No gage-height record Jan. 9 to Feb. 5; discharge estimated on basis of records for Odell Creek near Crescent and Big Marsh Creek at Hoey Ranch near Crescent. Stage-discharge relation affected by ice Nov. 19 to Dec. 5, Dec. 12 to Jan. 18, Feb. 20-25.

Reservoirs in Deschutes River basin above Bend, Oreg.

Crane Prairie Reservoir.--Lat 43°45'20", long. 121°46'50", on control structure at dam on Deschutes River in NW¼ sec. 16, T. 21 S., R. 8 E., 15 miles northwest of Lapine. Drainage area, 254 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange. Records available, November 1922 to September 1953. Staff gage read once daily. Datum of gage is 4,400.0 ft above mean sea level (levels by Bureau of Reclamation). Maximum contents observed during year, 57,450 acre-ft June 12, 13, 15 (elevation, 4,445.42 ft); minimum observed, 21,380 acre-ft Dec. 10 (elevation, 4,437.10 ft). Maximum contents observed during period 1922-53, 60,500 acre-ft June 5-7, 1943 (elevation, 4,446.0 ft); no usable contents at times.

Reservoir is formed by earth dam completed by North Canal Co. in 1922; gates were first closed Nov. 22, 1922; reconstructed as rock-faced dam with concrete control works by Bureau of Reclamation in 1939-40. Capacity, 55,340 acre-ft between elevation 4,424 ft (lip of fish screen structure) and 4,445 ft (crest of spillway). Natural flow passing through reservoir when outlet gates are open prevents withdrawal of storage to elevation of sill of gates. Water used for irrigation near Bend and Redmond.

Revisions.--WSP 1218: Drainage area.

Wickiup Reservoir.--Lat 43°41'10", long. 121°41'10", in gate chamber structure at dam on Deschutes River in NE¼ sec. 7, T. 22 S., R. 9 E., 9 miles west of Lapine. Drainage area, 482 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange. Records available, December 1942, when storage began, to September 1953. Tape gage read daily. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Maximum contents observed during year, 199,100 acre-ft Mar. 31, Apr. 1, 5, 6, 19, 20 (elevation, 4,337.58 ft); minimum observed, 523 acre-ft Oct. 18 (elevation, 4,270.86 ft). Maximum contents observed during period 1942-53, that of Mar. 31, Apr. 1, 5, 6, 19, 20, 1953; minimum observed since reservoir first filled in March 1949, that of Oct. 18, 1952.

Reservoir is formed by rock-faced, earth-fill dam completed by Bureau of Reclamation in August 1949. Capacity, 182,100 acre-ft between elevations 4,265.0 ft (no storage) to 4,336.0 ft (crest of spillway, with earth soft plug to elevation 4,339.0 ft). Natural flow passing through reservoir when outlet gates are open prevents withdrawal of storage below elevation 4,265.0 ft. Sill of trash rack structure, elevation 4,259.75 ft. Water is diverted from Deschutes River at Bend and is used for irrigation of lands near Madras. Daily elevations and capacity table furnished by Bureau of Reclamation.

Crescent Lake.--Lat 43°30'00", long. 121°58'20", in sec. 11, T. 24 S., R. 6 E., at center of fish screen 250 ft south of dam, and 14 miles west of Crescent. Drainage area, 60.7 sq mi, hydrologic drainage boundary uncertain owing to ground-water exchange. Records available, August 1922 to September 1953. Staff gage read about once each week; also staff gage at head of spillway of dam used occasionally. Datum of gage is 4,826.0 ft above mean sea level (levels by Deschutes County Municipal Improvement District); gage readings have been reduced to elevations above mean sea level. Maximum contents observed during year, 52,930 acre-ft July 12 (elevation, 4,840.50 ft); minimum observed, 35,420 acre-ft Oct. 21 (elevation, 4,835.86 ft). Maximum contents observed during period 1922-53, 72,460 acre-ft July 15, 1923 (elevation, 4,845.55 ft); minimum observed, 9,640 acre-ft Oct. 21, 1931 (elevation, 4,828.75 ft).

Reservoir is formed by dam of earth and logs, completed and storage begun in 1922. Capacity, 86,050 acre-ft between elevations 4,826 ft (sill of outlet gate) and 4,849 ft (crest of spillway). Dead storage not known; records given herein represent usable contents. Water is diverted from Deschutes River at Bend and used by Deschutes County Municipal Improvement District for irrigation near Tumalo.

Revisions (water years).--WSP 739: 1923 (maximum contents). WSP 1218: Drainage area.

Monthly elevation and contents, water year October 1952 to September 1953

Date	Crane Prairie Reservoir			Wickiup Reservoir			Crescent Lake		
	Elevation (feet)*	Contents (acre-feet)	Change in contents during month (acre-feet)	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)	Elevation (feet)*	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30.....	4,445.28	56,740	-	4,275.25	1,980	-	-	a40,170	-
Oct. 31.....	4,445.16	56,130	-610	4,284.00	7,860	+5,880	-	a35,900	-4,270
Nov. 30.....	4,438.94	28,380	-27,750	4,321.51	81,330	+73,470	-	a39,500	+3,600
Dec. 31.....	-	a30,700	+2,320	4,329.63	125,200	+43,870	-	a44,900	+5,400
Calendar year 1952..	-	-	+3,300	-	-	-11,600	-	-	-2,720
Jan. 31.....	-	a43,400	+12,700	4,333.50	157,400	+32,200	-	a51,600	+6,900
Feb. 28.....	-	a50,500	+7,100	4,335.85	180,500	+23,100	-	a52,900	+1,100
Mar. 31.....	4,444.04	50,660	+160	4,337.58	199,100	+18,600	4,840.26	52,020	-880
Apr. 30.....	4,444.34	52,110	+1,450	4,337.28	195,700	-3,400	4,839.74	50,040	-1,980
May 31.....	4,445.30	56,840	+4,730	4,335.89	180,900	-14,600	-	a50,400	+360
June 30.....	4,445.16	56,130	-710	4,334.91	171,000	-9,900	4,840.36	52,400	+2,000
July 31.....	4,443.18	46,610	-9,520	4,328.55	117,600	-53,400	4,839.60	49,510	-2,890
Aug. 31.....	4,441.54	39,210	-7,400	4,323.65	89,950	-27,650	-	a42,600	-6,910
Sept.30.....	4,443.58	48,480	+9,270	4,317.73	69,080	-20,870	-	a37,200	-5,400
Water year 1952-53....	-	-	-8,260	-	-	+67,100	-	-	-2,970

* Time of day variable.
† Readings at 8 a.m.
a No gage-height record; contents interpolated.

Deschutes River at Benham Falls, near Bend, Oreg.

Location.--Lat 43°56'20", long. 121°24'40", in SE¼ sec. 9, T. 19 S., R. 11 E., on left bank 150 ft upstream from head of Benham Falls, 1½ miles downstream from dam site for proposed Benham Falls Reservoir, 10 miles southwest of Bend, and at mile 181.1.

Drainage area.--1,759 sq mi.

Records available.--July 1906 to September 1914, August 1920 to September 1921, February 1924 to September 1953. Published as "at West's Ranch near Lava" July 1906 to February 1909 and April to September 1914. Published as "at Benham Falls near Bend" January 1905 to June 1906 and October 1913 to September 1914, but record is a sum of flow for stations at Bend and intervening canals; records not equivalent owing to losses between Benham Falls and Bend, which are now known to exist.

Gage.--Water-stage recorder. Altitude of gage is 4,140 ft (from river-profile map). July 21, 1906, to Feb. 20, 1909, and Apr. 2, to Sept. 30, 1914, staff gage at site 7 miles upstream at various datums. Feb. 21, 1909, to Feb. 10, 1924, staff gages at two different sites within 600 ft upstream from present site at various datums. Feb. 11, 1924, to Nov. 12, 1947, water-stage recorder at present site at datum 1.00 ft higher.

Average discharge.--36 years (1906-13, 1924-53), 1,351 cfs.

Extremes.--Maximum discharge during year, 2,920 cfs Aug. 6 (gage height, 4.86 ft); minimum, 613 cfs sometime during period Dec. 7-9 (gage height, 0.78 ft, from recorded range in stage).

1906-14, 1920-21, 1924-53: Maximum discharge, 5,000 cfs (estimated) Nov. 27, 1909 (gage height not determined); minimum, 448 cfs sometime during period Jan. 11 to Feb. 3, 1950 (from recorded range in stage); minimum daily, 480 cfs Feb. 12, 1948.

Remarks.--Records excellent. Small diversions above station for irrigation. Flow regulated since 1922 by Crane Prairie Reservoir and Crescent Lake, and since December 1942, by Wickiup Reservoir (see preceding page).

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.9	655	3.0	1,620
1.0	690	4.9	2,950
2.0	1,090		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,060	1,120	676	711	972	1,060	1,370	1,880	1,830	2,800	2,890	2,440
2	2,040	864	683	722	1,000	1,040	1,360	1,890	*1,790	2,750	2,890	2,210
3	2,000	812	686	714	1,060	1,020	1,360	1,880	1,760	2,770	2,890	2,110
4	1,950	804	686	714	1,080	1,020	1,370	1,870	1,740	2,760	2,890	2,150
5	1,910	780	697	718	1,120	1,030	1,380	1,850	1,720	2,740	2,910	2,210
6	1,880	753	704	722	1,180	1,040	1,380	1,870	1,730	2,730	2,890	2,210
7	1,860	750	660	732	1,220	1,040	1,400	1,960	1,730	2,720	2,750	2,200
8	1,850	750	700	742	1,280	1,040	1,410	1,980	1,720	2,710	2,700	2,190
9	1,850	750	720	804	1,280	1,060	1,420	2,040	1,730	2,730	2,690	2,190
10	1,870	750	694	804	*1,280	1,070	1,410	2,200	1,730	2,810	2,670	2,020
11	1,900	750	697	804	1,250	1,090	1,390	2,260	1,740	2,820	2,670	2,100
12	1,910	746	700	852	1,240	1,090	1,380	2,280	1,770	2,810	2,650	2,170
13	1,920	764	700	888	1,220	1,080	1,380	2,350	1,790	2,810	2,500	2,170
14	*1,920	768	700	888	1,190	1,060	*1,370	2,420	1,790	*2,800	*2,480	2,160
15	1,920	756	714	884	1,150	1,040	1,370	2,420	1,780	2,780	2,480	2,160
16	1,910	718	718	888	1,100	1,040	1,380	2,390	1,760	*2,770	2,470	2,150
17	1,880	708	718	940	1,090	1,040	1,380	2,300	1,840	2,770	2,470	2,140
18	1,830	*711	718	1,040	1,050	1,040	1,400	2,280	2,100	2,800	2,460	*2,140
19	1,730	708	718	1,040	1,000	1,060	1,410	2,300	2,350	2,830	2,450	2,050
20	1,610	704	718	1,040	1,020	1,070	1,460	2,300	2,400	2,840	2,450	2,100
21	1,570	704	718	1,040	1,180	1,060	1,510	2,300	2,490	2,840	2,440	2,140
22	1,480	683	711	1,040	1,180	1,060	1,520	2,290	2,490	2,810	2,440	2,140
23	1,480	655	694	1,060	1,160	1,090	1,540	2,300	2,500	2,810	2,440	2,140
24	1,460	*676	704	1,110	1,150	1,100	1,630	2,360	2,590	2,880	2,430	2,120
25	1,460	680	697	1,160	1,120	1,120	1,750	2,410	2,680	2,910	2,430	2,120
26	1,450	683	700	1,140	1,060	1,120	1,820	2,390	2,820	2,910	2,470	2,120
27	1,430	680	708	1,080	1,050	1,120	1,870	2,270	2,840	2,900	2,470	2,110
28	1,430	666	704	1,020	1,060	1,160	1,910	2,120	2,830	2,900	2,470	2,070
29	1,370	676	704	976	-	1,350	1,940	1,920	2,830	2,890	2,490	2,050
30	1,340	672	697	972	-	1,370	1,940	1,840	2,810	2,890	2,490	2,050
31	1,280	-	697	964	-	1,370	-	1,830	-	2,890	2,490	-
Total	53,550	22,241	21,741	28,209	31,742	33,950	45,210	66,750	63,680	87,180	80,310	64,330
Mean	1,727	741	701	910	1,134	1,095	1,507	2,153	2,123	2,812	2,591	2,144
Ac-ft	106,200	44,110	43,120	55,950	62,960	67,340	89,670	132,400	126,300	172,900	159,300	127,600

Calendar year 1952: Max 3,080 Min 655 Mean 1,826 Ac-ft 1,326,000
Water year 1952-53: Max 2,910 Min 655 Mean 1,641 Ac-ft 1,188,000

* Discharge measurement made on this day.

Deschutes River below Lava Island, near Bend, Oreg.

Location.--Lat 44°00'00", long. 121°22'30", in SW¼ sec. 23, T. 18 S., R. 11 E., on right bank three-quarters of a mile downstream from Lava Island, 1½ miles downstream from intake of Arnold Canal, 5 miles southwest of Bend, and at mile 173.0.

Drainage area.--1,829 sq mi.

Records available.--March 1926 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 3,825 ft (by barometer). Prior to May 4, 1927, water-stage recorder at site a quarter of a mile upstream at different datum. May 4, 1927, to Nov. 11, 1947, water-stage recorder at present site at datum 1.00 ft higher.

Average discharge.--27 years, 1,144 cfs.

Extremes.--Maximum discharge during year, 2,730 cfs Aug. 1 (gage height, 3.59 ft); minimum, 577 cfs sometime during period Dec. 3-18 (gage height, 1.14 ft).
1926-53: Maximum discharge, 2,780 cfs June 28, 29, 30, 1952 (gage height, 3.64 ft); minimum, 416 cfs Jan. 18, 1950 (gage height, 0.79 ft).

Remarks.--Records good except those for periods of no gage-height record, which are fair. Arnold Canal diverts water above station for irrigation (see following page). Flow regulated by Crescent Lake and Crane Prairie and Wickiup Reservoirs (see p. 61).

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.1	555
2.0	1,190
3.0	2,120
3.6	2,740

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,890	1,040	610	610	926	972	1,320	1,680	1,690	2,530	2,630	2,260
2	1,870	850	599	628	948	964	1,320	1,680	*1,630	2,520	2,620	2,080
3	1,840	794	620	622	1,010	940	1,300	1,670	1,600	2,510	2,630	1,960
4	1,800	774	630	628	1,030	933	1,290	1,660	1,580	2,500	2,630	1,940
5	1,780	774	660	652	1,070	940	1,290	1,640	1,560	2,480	2,640	2,010
6	1,740	742	680	670	1,110	972	1,300	1,640	1,570	2,470	2,650	2,020
7	1,720	735	640	683	1,170	996	1,310	1,720	1,580	2,460	2,550	2,020
8	1,710	730	660	696	1,240	996	1,320	1,740	1,570	2,450	2,490	2,010
9	1,710	730	700	742	1,250	1,010	1,320	1,770	1,570	2,450	2,470	2,000
10	1,720	740	680	754	1,240	1,020	1,320	1,880	1,580	2,510	*2,450	1,890
11	1,750	740	680	754	*1,210	1,040	1,300	1,960	1,580	2,530	2,440	1,890
12	1,760	740	680	787	1,200	1,040	1,300	2,030	1,600	2,530	2,430	1,970
13	1,770	740	680	828	1,180	1,040	1,290	2,130	1,610	2,520	2,330	1,980
14	1,770	740	680	835	1,150	1,020	*1,280	2,300	1,620	*2,520	2,280	1,970
15	1,780	740	700	828	1,110	1,000	1,270	2,310	1,610	2,510	2,270	1,970
16	1,770	720	700	835	1,070	996	1,270	2,300	1,600	*2,490	2,260	1,960
17	1,750	720	700	870	1,050	996	1,280	2,220	1,620	2,490	2,250	*1,960
18	1,700	700	700	972	1,020	996	1,300	2,180	1,780	2,510	2,240	1,950
19	1,630	680	683	1,000	964	1,000	1,300	2,190	1,990	2,540	2,230	1,900
20	1,500	670	683	996	956	1,020	1,320	2,170	2,140	2,550	2,240	1,890
21	1,460	680	676	980	1,120	1,010	1,370	2,120	2,240	2,550	2,230	1,940
22	1,390	660	670	980	1,140	996	1,370	2,100	2,280	2,540	2,220	1,950
23	1,360	640	664	1,000	1,120	1,030	1,380	2,110	2,290	2,530	2,220	1,940
24	*1,360	650	658	1,030	1,110	1,040	1,450	2,160	2,360	2,590	2,220	1,940
25	1,330	660	652	1,060	1,080	1,050	1,440	2,230	2,420	2,620	2,220	1,930
26	1,320	660	652	1,060	1,000	1,050	1,610	2,240	2,520	2,630	2,250	1,930
27	1,320	650	652	1,000	972	1,060	1,650	2,100	2,550	2,630	2,260	1,920
28	1,260	640	652	956	972	1,080	1,680	1,970	2,550	2,620	2,280	1,900
29	1,240	650	634	905	-	1,270	1,720	1,780	2,550	2,620	2,280	1,890
30	1,200	640	610	898	-	1,320	1,730	1,680	2,540	2,620	2,290	1,890
31	1,140	-	604	912	-	1,320	-	1,670	-	2,620	2,280	-
Total	49,340	21,629	20,489	26,171	30,418	32,117	41,400	61,030	57,380	78,640	73,460	58,850
Mean	1,592	721	661	844	1,086	1,036	1,380	1,969	1,913	2,537	2,370	1,962
Ac-ft	97,860	42,900	40,640	51,910	60,330	63,700	82,120	121,100	113,800	156,000	145,700	116,700

Calendar year 1952: Max 2,780 Min 599 Mean 1,676 Ac-ft 1,217,000
Water year 1952-53: Max 2,650 Min 599 Mean 1,509 Ac-ft 1,093,000

* Discharge measurement made on this day.
Note.--No gage-height record Oct. 31 to Nov. 2, Nov. 8 to Dec. 1, Dec. 3-18; discharge estimated on basis of unpublished records for station above Lava Island adjusted for flow in Arnold Canal, weather records, and recorded range in stage.

Diversions from Deschutes River near Bend, Oreg.

The following six canals, which are equipped with water-stage recorders, are the only diversions from Deschutes River between gaging stations at Benham Falls and below Bend.

Arnold Canal diverts from right bank at head of Lava Island, in SW¼ sec. 27, T. 18 S., R. 11 E.; water used for irrigation southeast of Bend.

Central Oregon Canal diverts from right bank in NE¼ sec. 13, T. 18 S., R. 11 E.; water used for irrigation east of Bend. (Beginning Oct. 1, 1932, record obtained upstream from intake of Pilot Butte Canal.)

Deschutes County Municipal Improvement District Canal diverts from left bank in NE¼ sec. 32, T. 17 S., R. 12 E., at Bend; water used to supplement flow of Tumalo project feed canal for irrigation near Tumalo; water stored at Crescent Lake is diverted by this canal.

North Unit Main Canal diverts water from right bank in NE¼ sec. 29, T. 17 S., R. 12 E.; water used for irrigation near Madras.

North and Swalley Canals diverts from right bank in NE¼ sec. 29, T. 17 S., R. 12 E.; water used for irrigation north of Bend, mostly near Redmond.

Records of monthly discharge of these canals, published as a group, are available from October 1926 to September 1953; records for each canal published separately prior to 1926.

Diversions, in acre-feet, water year October 1952 to September 1953

Month	Arnold Canal	Central Oregon Canal	Deschutes County Municipal Improvement District Canal	North Unit Main Canal	North Canal	Swalley Canal	Total
October	5,140	25,760	7,310	20,200	25,400	5,780	89,590
November	20	61	0	0	3,350	688	4,120
December	496	2,620	0	0	3,170	381	6,670
January	841	2,970	0	0	2,380	645	6,840
February	196	0	0	46	956	284	1,480
March	446	2,020	0	0	791	274	3,530
April	3,130	13,920	0	23,440	17,440	3,540	61,470
May	4,020	29,900	2,640	35,290	25,800	6,010	103,700
June	4,760	26,670	2,940	35,010	23,580	6,100	99,060
July	7,000	35,630	4,470	67,010	32,580	7,590	154,300
August	6,810	35,270	8,540	40,770	32,220	7,500	131,100
September	5,820	29,690	8,410	23,070	26,640	6,780	100,400
Water year 1952-53	38,680	204,500	34,310	244,800	194,300	45,570	762,200

Deschutes River below Bend, Oreg.

Location.--Lat 44°05'00", long. 121°18'20", in SE¼ sec. 20, T. 17 S., R. 12 E., on right bank half a mile downstream from North Canal Dam, half a mile north of Bend city limits, and at mile 164.4.

Drainage area.--1,899 sq mi.

Records available.--October 1914 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 3,503.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1931, at site 200 ft downstream at datum 1.00 ft higher.

Average discharge.--39 years, 598 cfs.

Extremes.--Maximum discharge during year, 1,300 cfs Mar. 30 (gage height, 3.55 ft); minimum, 11 cfs Apr. 20 (gage height, 1.23 ft).
1914-53: Maximum discharge, 2,500 cfs Dec. 7, 1921 (gage height, 3.9 ft, present datum); maximum gage height recorded, 4.46 ft Jan. 26, 1930, present datum (backwater from ice); minimum discharge, 1 cfs Aug. 25, 1930.
Maximum discharge known near this site since 1905, 4,820 cfs Nov. 27, 1909.

Remarks.--Records fair. Six large canals divert water above station for irrigation (see preceding page). Flow regulated by hydroelectric plant at Bend, since 1922 by Crescent Lake and Crane Prairie Reservoir, and since December 1942 by Wickiup Reservoir (see p. 61).

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	215	662	503	165	970	768	1,010	165	529	285	201	895
2	192	484	235	192	1,000	790	865	178	466	270	196	782
3	170	388	174	415	1,030	918	812	178	406	275	220	641
4	140	418	140	607	*1,060	910	775	148	328	270	310	529
5	97	516	206	641	1,090	926	725	90	285	250	412	522
6	50	739	548	690	1,130	918	669	58	300	210	496	503
7	44	711	627	711	1,180	918	669	105	370	90	490	490
8	38	725	600	739	1,230	888	669	60	382	70	466	454
9	*45	725	662	768	1,250	950	676	44	430	*68	424	376
10	58	725	634	775	1,230	902	627	100	472	110	400	240
11	56	725	620	775	1,200	850	594	100	484	113	370	178
12	55	718	607	805	1,190	820	412	124	562	92	364	285
13	70	725	588	850	1,150	812	370	162	614	105	255	300
14	85	725	574	865	1,120	790	280	305	662	174	215	295
15	127	725	614	858	1,070	865	148	328	614	144	250	295
16	174	697	641	865	1,050	966	100	352	418	92	235	275
17	183	669	662	895	1,050	974	105	250	201	151	225	275
18	165	669	662	1,010	1,020	974	78	158	130	151	210	270
19	347	662	676	1,030	966	982	53	170	158	178	210	225
20	503	648	662	1,010	950	1,010	38	201	245	100	220	183
21	478	607	662	1,010	1,110	990	47	188	275	85	245	255
22	424	600	655	974	1,140	974	36	250	165	53	275	411
23	388	574	648	732	1,120	990	27	340	110	29	295	376
24	376	588	641	614	1,110	1,010	50	448	*113	50	316	376
25	364	627	641	620	1,070	1,010	100	614	74	85	370	394
26	370	620	641	641	902	1,010	113	820	140	100	529	400
27	364	614	641	798	775	1,010	105	842	192	100	676	400
28	364	614	641	990	782	1,020	124	850	210	85	753	394
29	370	607	503	926	-	1,200	201	704	230	72	828	425
30	328	614	235	902	-	*1,260	245	600	270	76	850	472
31	334	-	162	926	-	1,250	-	581	-	134	865	-
Total	6,974	19,121	16,705	23,799	29,945	29,655	10,723	9,513	9,835	4,067	12,171	11,916
Mean	225	637	539	768	1,069	957	357	307	328	131	393	397
Ac-ft	13,830	37,930	33,130	47,200	59,400	58,820	21,270	18,870	19,510	8,070	24,140	23,640

Calendar year 1952: Max 1,690 Min 38 Mean 608 Ac-ft 441,300
Water year 1952-53: Max 1,260 Min 27 Mean 505 Ac-ft 365,800

* Discharge measurement made on this day.

Tumalo Creek near Bend, Oreg.

Location.--Lat 44°05'20", long. 121°22'20", in SE¼ sec. 23, T. 17 S., R. 11 E., on left bank a quarter of a mile upstream from diversion dam of feed canal of Tumalo project, 4 miles upstream from mouth, and 4 miles northwest of Bend.

Drainage area.--47.3 sq mi.

Records available.--October 1906 to December 1908, October 1910 to April 1913 (winters only), November 1913 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 3,566.96 ft above mean sea level, datum of 1929. Prior to November 1910, staff gage at site half a mile upstream at different datum. November 1910 to Apr. 26, 1915, staff gage, and Apr. 27, 1915, to Sept. 30, 1918, staff gage or water-stage recorder, at present site and datum.

Average discharge.--35 years (1913-14, 1916-21, 1923-35, 1936-53), 101 cfs.

Extremes.--Maximum discharge during year, 490 cfs July 14; minimum daily, 60 cfs Nov. 29 to Dec. 3, Dec. 23-28.
1906-8, 1911-53: Maximum discharge, 1,420 cfs about Jan. 6, 1923 (no flow in canal), from rating curve extended above 200 cfs; minimum daily, 25 cfs Jan. 3, 1924.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are poor. All records presented herein include flow in Columbia Southern Canal, which diverts 8 miles above station for irrigation of lands near Tumalo. No flow in Columbia Southern Canal Oct. 28 to May 6. Crater Creek Canal diverts flow of tributaries of Soda Creek into head of Tumalo Creek.

Revisions (water years).--WSP 864: 1937. WSP 1218: Drainage area.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	74	60	70	107	90	*78	141	199	256	151	104
2	71	72	60	70	109	90	78	140	199	282	156	*102
3	71	72	60	70	196	90	78	140	203	307	*149	99
4	69	70	70	70	164	90	78	139	203	314	145	97
5	69	70	80	70	*155	85	80	157	209	336	152	95
6	68	70	80	70	166	85	80	171	241	*361	156	94
7	68	70	80	70	166	85	81	171	268	394	158	96
8	68	69	85	70	155	83	83	160	225	405	145	92
9	68	69	90	100	143	83	80	152	208	363	129	88
10	68	70	90	80	135	85	80	145	204	350	125	88
11	68	70	90	90	128	*83	78	140	225	360	123	89
12	68	70	90	110	122	83	78	140	249	366	125	91
13	68	72	85	100	118	81	77	140	256	381	124	93
14	68	72	80	*88	113	81	75	140	266	408	120	91
15	69	72	75	83	109	81	77	150	275	349	122	90
16	68	70	68	85	107	83	77	170	264	280	117	99
17	69	*70	69	96	105	81	78	200	300	261	109	85
18	69	72	69	146	105	81	77	*231	306	263	103	84
19	69	72	69	117	100	81	81	332	279	254	118	83
20	70	72	69	120	95	81	86	268	247	228	123	83
21	70	72	70	105	95	81	96	226	247	209	113	80
22	69	70	65	100	91	83	111	199	*263	218	106	84
23	69	70	60	107	89	81	126	189	263	213	105	82
24	*71	70	60	100	91	83	124	170	248	193	107	81
25	72	70	60	98	91	81	135	165	255	181	107	79
26	72	68	60	96	90	81	155	158	254	175	171	78
27	62	65	60	91	90	80	180	148	247	177	138	78
28	74	62	60	91	90	80	168	150	249	174	126	83
29	74	60	65	91	-	78	160	176	256	176	134	80
30	74	60	70	91	-	78	150	186	254	177	112	77
31	74	-	70	91	-	78	-	191	-	160	108	-
Total	2,159	2,085	2,219	2,836	3,325	2,566	2,985	5,385	7,362	8,571	3,977	2,635
Mean	69.6	69.5	71.6	91.5	119	82.8	99.5	174	245	276	128	87.8
Ac-ft	4,280	4,140	4,400	5,630	6,600	5,090	5,920	10,680	14,600	17,000	7,890	5,230

Calendar year 1952: Max 430 Min 60 Mean 121 Ac-ft 87,500
Water year 1952-53: Max 408 Min 60 Mean 126 Ac-ft 91,460

* Discharge measurement made on this day.

Note.--No gage-height record on river station Oct. 1-23, Dec. 1-15, Dec. 21 to Jan. 13, Feb. 26 to Mar. 7, Apr. 29, 30, May 2, 3, 11-17, Sept. 10-30; discharge estimated on basis of weather records at Bend, recorded range in stage, records for Squaw Creek near Sisters, and unpublished records for Tumalo Feed Canal. Stage-discharge relation affected by ice Nov. 22-30, Feb. 18-20.

Squaw Creek near Sisters. Oreg.

Location.--Lat 44°13'50", long. 121°34'20", in NW¼ sec. 32, T. 15. S., R. 10 E., on right bank 600 ft upstream from intake of McCallister ditch and 4 miles south of Sisters.

Drainage area.--54.8 sq mi.

Records available.--July 1906 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 3,490 ft (by barometer). July 1, 1906, to May 29, 1913, staff gage at site 800 ft downstream at different datum, below intake, but including flow of McCallister ditch. May 30, 1913, to Sept. 2, 1915, staff gage and Mar. 24, 1916, to Oct. 5, 1928, water-stage recorder, at site 100 ft downstream at different datum.

Average discharge.--41 years (1906-18, 1919-20, 1925-53), 104 cfs.

Extremes.--Maximum discharge during year, 467 cfs July 14 (gage height, 2.61 ft); maximum gage height, 3.75 ft Nov. 30 (backwater from ice); minimum discharge, 40 cfs Apr. 14, 15.

1906-53: Maximum gage height, about 8.75 ft (over top of gage), Nov. 22, 1909, site and datum then in use (discharge not determined); maximum discharge recorded since that time, 1,130 cfs Dec. 2, 1941 (gage height, 3.33 ft); minimum, 19 cfs Dec. 6, 1922.

Remarks.--Records fair except those for periods of ice effect or no gage-height record, which are poor. A canal near mouth of Pole Creek, a tributary above station, diverts entire flow of that creek for irrigation of lands near Sisters.

Revisions.--WSP 1218: Drainage area.

Rating tables, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 3		Dec. 4 to Sept. 30	
1.2	35	1.2	38
1.5	89	1.5	108
		2.0	270
		2.4	440

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	67	49	a60	b50	a100	67	*53	89	120	238	194	135
2	67	49	a70	b50	a150	62	53	84	123	256	194	135
3	67	53	a85	b52	a200	62	51	76	126	294	*190	135
4	67	53	105	55	a250	59	51	74	129	294	190	123
5	67	55	103	57	a220	62	49	76	132	326	207	120
6	65	55	97	57	a190	59	49	89	150	359	224	120
7	*64	55	92	53	a170	57	49	100	190	354	228	120
8	64	53	94	74	a150	62	49	94	171	386	224	120
9	64	56	114	162	a140	64	49	89	162	318	210	114
10	64	55	111	97	*132	64	48	81	162	*330	207	111
11	62	56	114	100	123	64	46	81	174	346	207	111
12	60	55	114	138	117	*62	44	81	194	364	214	117
13	58	53	103	126	117	53	44	81	187	408	210	123
14	58	55	a90	*103	111	46	42	84	194	431	210	*120
15	58	53	a80	81	105	49	42	89	214	390	214	117
16	56	56	a70	89	105	49	42	92	224	334	204	114
17	56	*58	a60	120	105	44	42	a110	249	306	197	100
18	56	58	*b56	246	103	46	42	a180	263	298	194	94
19	56	56	b60	159	100	44	44	*278	242	286	194	92
20	56	55	64	156	92	46	49	184	210	270	197	89
21	56	53	62	126	89	46	59	168	214	249	184	86
22	55	b52	59	123	81	46	67	147	232	246	174	81
23	56	b52	b56	126	76	48	69	135	*235	246	162	79
24	56	b50	b52	108	76	48	71	120	224	224	156	76
25	56	b55	b50	100	74	51	74	108	232	210	150	76
26	55	b50	b48	94	69	51	76	105	235	204	249	a75
27	55	b50	b45	92	69	51	120	103	228	200	181	a74
28	55	b50	b46	92	74	53	117	100	232	197	165	a72
29	53	b50	b47	97	-	51	103	103	235	197	162	a70
30	53	b50	b48	a100	-	51	97	108	235	197	147	a70
31	53	-	b50	a100	-	51	-	111	-	194	138	-
Total	1,835	1,595	2,305	3,183	3,388	1,668	1,791	3,420	5,918	8,952	5,977	3,069
Mean	59.2	53.2	74.4	103	121	53.8	59.7	110	197	289	193	102
Ac-ft	3,640	3,160	4,570	6,310	6,720	3,310	3,550	6,780	11,740	17,760	11,860	6,090

Calendar year 1952: Max 397 Min 38 Mean 110 Ac-ft 79,900
Water year 1952-53: Max 431 Min 42 Mean 118 Ac-ft 85,490

Peak discharge (base, 300 cfs).--Jan. 18 (2 p.m.) 342 cfs (2.18 ft); Feb. 4 (time unknown) 390 cfs (2.29 ft); May 18 or 19 (time unknown) 314 cfs (2.11 ft); June 18 (1 a.m.) 310 cfs (2.04 ft); July 8 (5 to 6 a.m.) 426 cfs (2.47 ft); July 14 (10 p.m.) 467 cfs (2.61 ft); Aug. 26 (3 to 4 a.m.) 322 cfs (2.13 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for Tumalo Creek near Bend and Lake Creek near Sisters.

b Stage-discharge relation affected by ice.

Deschutes River near Culver, Oreg.

Location.--Lat 44°32'30", long. 121°17'10", in SW¼ sec. 10, T. 12 S., R. 12 E., on right bank 0.7 mile downstream from bridge on Cove-Grandview road, 2½ miles above Crooked River, 4 miles northwest of Culver, and at mile 116.5.

Drainage area.--2,723 sq mi..

Records available.--July 1952 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 1,755 ft above mean sea level (river-profile survey).

Extremes.--Maximum discharge during year, 2,030 cfs Jan. 19 (gage height, 4.00 ft); minimum, 498 cfs July 25 (gage height, 1.29 ft).
1952-53: Maximum discharge, that of Jan. 19, 1953; minimum, 482 cfs July 31, 1952 (gage height, 1.23 ft).

Remarks.--Records excellent. Slight regulation by Crescent Lake, Crane Prairie, and Wickiup Reservoirs. Many diversions for irrigation above station. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.3	500
2.0	745
3.0	1,315
4.0	2,030

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	620	818	1,190	659	1,570	1,270	1,840	683	1,070	687	555	1,220
2	599	1,080	956	687	1,580	1,280	1,440	624	968	695	582	1,190
3	585	830	700	691	1,870	1,440	1,440	638	896	730	585	1,070
4	570	794	675	1,020	1,900	1,520	1,340	624	854	778	602	950
5	564	818	641	1,090	1,860	1,510	1,360	613	*794	818	659	890
6	552	1,050	789	1,160	1,890	1,510	1,250	567	772	842	740	872
7	530	1,190	1,250	1,220	1,940	1,530	1,220	549	908	812	824	854
8	511	1,190	1,180	1,260	1,970	1,430	1,190	573	944	762	818	830
9	516	1,200	1,240	1,450	1,960	1,530	1,200	544	926	720	767	789
10	508	*1,200	1,270	1,470	1,950	1,560	1,190	514	950	667	725	740
11	516	1,200	1,240	1,440	1,900	1,450	1,130	555	950	675	695	627
12	516	1,200	1,260	1,420	1,890	1,400	1,020	564	1,060	705	691	613
13	514	1,210	1,200	1,510	1,870	*1,420	920	585	1,120	735	683	675
14	516	1,220	1,170	1,490	1,800	1,390	866	634	1,190	824	616	683
15	535	1,220	1,170	1,440	1,760	1,380	745	767	1,230	890	610	683
16	558	1,210	*1,200	1,430	1,710	1,530	665	806	1,120	705	624	679
17	606	1,180	1,240	*1,470	1,730	1,560	616	784	974	*616	616	667
18	610	1,190	1,240	1,720	1,700	1,570	613	687	806	627	606	667
19	599	1,190	1,220	1,930	1,610	1,570	592	745	745	638	599	659
20	794	1,180	1,230	1,780	1,580	1,620	573	848	710	630	606	627
21	884	1,160	1,220	1,750	1,620	1,610	522	762	725	561	610	616
22	878	1,120	1,220	1,710	1,740	1,570	533	695	740	555	624	652
23	812	1,120	1,200	1,660	1,740	1,580	519	745	652	549	705	812
24	784	1,120	1,190	1,280	1,710	1,580	505	842	602	527	679	740
25	767	1,160	1,180	1,250	1,710	1,600	514	962	585	514	*671	750
26	767	1,160	1,210	1,220	1,650	1,600	576	1,220	564	530	800	762
27	767	1,150	1,220	*1,200	1,330	1,590	*599	1,310	806	538	1,050	778
28	767	1,150	1,220	1,470	1,300	1,590	616	1,340	630	544	1,070	767
29	789	1,150	1,250	1,510	-	1,630	613	1,280	652	538	1,160	778
30	772	1,130	944	1,500	-	1,780	675	1,130	663	530	1,200	812
31	745	-	691	1,540	-	1,790	-	1,070	-	535	1,190	-
Total	20,051	33,590	34,606	42,427	48,840	47,390	26,882	24,260	25,406	20,477	22,962	23,452
Mean	647	1,120	1,116	1,369	1,744	1,529	896	783	847	661	741	782
Ac-ft	39,770	66,620	68,640	84,150	96,870	94,000	53,320	48,120	50,390	40,620	45,540	46,520

Calendar year 1952: Max - Min - Mean - Ac-ft -
Water year 1952-53: Max 1,970 Min 505 Mean 1,015 Ac-ft 734,600

* Discharge measurement made on this day.

South Fork Beaver Creek near Paulina, Oreg.

Location.--Lat 44°07'50", long. 119°44'50", in N½ sec. 5, T. 17 S., R. 25 E., on right bank at Palmer Ranch, 11 miles east of Paulina.

Drainage area.--90 sq mi, approximately.

Records available.--October 1945 to September 1953 in reports of Geological Survey (discontinued). June 1944 to September 1945 in files of Bureau of Reclamation.

Gage.--Water-stage recorder. Altitude of gage is 3,920 ft (by barometer). Prior to Sept. 16, 1948, staff gage at same site and datum.

Average discharge.--9 years, 21.5 cfs.

Extremes.--Maximum discharge during year, 285 cfs Feb. 3 (gage height, 5.38 ft); no flow for many days.
1944-53: Maximum discharge, about 900 cfs Dec. 28 or 29, 1945, computed on basis of records for Beaver Creek near Paulina; maximum gage height, 7.70 ft Mar. 25, 1952; no flow at times.

Remarks.--Records fair except those for periods of ice effect, which are poor. Most of summer flow diverted above station for irrigation and stock water. No regulation.

Rating tables, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 28 to June 11)

Oct. 1 to Feb. 3				Feb. 4 to Sept. 30			
2.35	0	3.0	15	1.6	0	2.2	6.2
2.4	.2	3.5	42	1.7	.1	2.5	14
2.5	.9	4.0	86	1.8	.5	3.0	34
2.6	2.5	4.5	148	1.9	1.4	3.5	64
2.8	8.0			2.0	2.5	4.0	105

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0	0	1.0	4.2	16	26	36	49	38	11	2.4	6.4
2	0	0	1.7	3.9	18	23	34	46	37	10	1.8	4.9
3	0	0	2.5	4.4	75	25	34	43	*36	8.9	2.0	.8
4	0	0	3.4	4.2	55	27	34	38	34	8.4	2.5	.3
5	0	0	2.9	3.6	52	26	34	38	34	8.2	3.0	.2
6	0	0	3.2	5.0	90	28	34	46	34	8.2	3.3	.1
7	0	0	3.6	4.2	71	30	34	46	38	8.2	2.7	0
8	0	0	3.2	9.3	62	32	32	48	44	8.0	2.1	0
9	0	0	2.9	59	40	30	32	47	48	7.7	1.8	0
10	0	0	4.4	30	36	26	32	46	39	5.4	1.6	0
11	0	0	5.2	26	39	*25	32	44	34	3.9	1.5	0
12	0	.4	6.8	24	36	25	32	40	42	3.3	1.3	0
13	0	1.0	6.4	20	36	25	31	34	47	2.3	1.2	0
14	0	1.5	5.2	16	38	25	30	34	32	1.7	2.1	0
15	0	2.1	4.7	12	33	25	29	36	28	*1.5	2.2	0
16	0	2.1	4.4	19	32	24	31	36	27	1.0	1.2	0
17	2.3	1.5	4.7	43	33	22	43	38	25	.9	.6	0
18	5.5	.9	5.0	121	29	23	39	38	23	1.6	.4	0
19	5.0	.7	*4.4	44	28	23	38	47	22	6.0	.3	0
20	5.2	.5	3.9	32	30	22	47	65	22	5.8	.3	0
21	4.4	.5	2.1	24	31	26	50	54	22	5.6	.2	0
22	2.9	b.5	3.4	20	31	35	63	50	23	5.4	.1	0
23	0	.5	b3	18	29	46	50	55	17	5.8	0	.3
24	0	b.4	b2	18	27	98	46	65	16	5.6	0	.3
25	0	b.4	2.7	17	25	63	44	44	14	5.6	0	0
26	0	b.4	3.2	14	25	46	*44	42	13	5.4	0	0
27	0	b.4	b3	12	30	41	52	34	12	2.7	0	0
28	0	b.4	b2.5	16	31	42	74	35	12	2.2	.4	0
29	0	b.4	b3	*15	-	41	61	34	12	2.7	1.4	0
30	0	.4	b3.5	15	-	38	55	32	12	3.0	1.6	0
31	0	-	b3	15	-	38	-	34	-	2.5	2.1	-
Total	25.3	15.0	110.9	668.8	1,078	1,026	1,227	1,338	837	158.5	40.1	13.3
Mean	0.82	0.50	3.58	21.6	38.5	33.1	40.9	43.2	27.9	5.11	1.29	0.44
Ac-ft	50	30	220	1,330	2,140	2,040	2,430	2,650	1,660	314	80	26

Calendar year 1952: Max 320 **Min** 0 **Mean** 31.7 **Ac-ft** 23,030
Water year 1952-53: Max 121 **Min** 0 **Mean** 17.9 **Ac-ft** 12,980

Peak discharge (base, 150 cfs).--Jan. 18 (1 p.m.) 205 cfs (4.88 ft); Feb. 3 (2 p.m.) 285 cfs (5.38 ft); Mar. 24 (6:30 p.m.) 164 cfs (4.57 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

North Fork Beaver Creek near Paulina, Oreg.

Location.--Lat 44°10'30", long. 119°42'50", in NW¼ sec. 22, T. 16 S., R. 25 E., on left bank 12 miles east of Paulina.

Drainage area.--61.8 sq mi.

Records available.--October 1945 to September 1953 in reports of Geological Survey. January 1942 to September 1945 in files of Bureau of Reclamation.

Gage.--Water-stage recorder. Datum of gage is 3,848.83 ft above mean sea level (survey by Bureau of Reclamation).

Average discharge.--11 years, 27.5 cfs.

Extremes.--Maximum discharge during year, 745 cfs Jan. 18 (gage height, 5.02 ft), from rating curve extended above 330 cfs; minimum, 0.2 cfs Nov. 22-26, 28, 29.
1942-53: Maximum discharge, 955 cfs Mar. 25, 1952 (gage height, 5.85 ft), from rating curve extended above 330 cfs; no flow July 30 to Aug. 7, Aug. 19, 20, 1951.

Remarks.--Records good except those for periods of ice effect and those below 3 cfs, which are fair. Several small dams above station store water for irrigation and stock watering. Most of summer flow diverted above station for irrigation.

Revisions.--WSP 1218: Drainage area.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	0.3	0.5	1.1	30	25	52	76	29	3.2	0.3	0.4
2	.4	.3	.4	1.2	33	b18	48	61	43	2.6	.4	.4
3	.4	.3	.4	1.2	339	b16	51	49	*26	2.2	.4	.4
4	.4	.3	.5	1.2	252	18	63	48	21	1.8	.4	.4
5	.4	.3	.6	1.0	191	18	78	52	21	1.6	.4	.4
6	.4	*.4	.6	1.0	302	22	92	61	26	1.4	.4	.4
7	.3	.4	1.0	1.5	318	26	71	58	40	1.1	.4	.4
8	.3	.4	.6	7.0	242	38	55	49	40	.9	.4	.4
9	.3	.3	.6	115	105	57	46	40	49	.7	.4	.4
10	.3	.4	1.4	40	78	81	42	31	58	.7	.4	.4
11	.3	.5	1.3	16	64	*62	34	25	32	.6	.4	.4
12	.3	.5	1.3	41	48	57	30	23	31	.6	.4	.4
13	.3	.5	1.1	60	46	46	27	22	111	.5	.4	.4
14	.3	.5	.7	56	42	37	23	23	49	.5	.4	.4
15	.3	.4	.9	26	34	37	22	24	35	*.4	.4	.4
16	.3	.3	.9	47	b30	33	30	21	29	.4	.4	.4
17	.3	.3	.9	145	b30	28	68	23	23	.4	.4	.4
18	.3	.3	.9	515	b30	29	64	27	17	.4	.4	.4
19	.3	.3	*1.0	218	b28	33	77	74	15	.4	.4	.4
20	.3	.3	1.0	160	b26	33	101	98	13	.3	.4	.4
21	.3	.3	.9	100	b22	33	137	58	11	.4	.4	.4
22	.3	.3	1.0	64	b22	44	137	48	8.7	.4	.4	.4
23	.3	.3	1.0	48	b20	110	145	67	7.1	.4	.4	.4
24	.3	.3	1.1	37	b18	178	127	141	6.1	.4	.4	.4
25	.4	.3	1.0	33	b18	141	106	87	5.5	.4	.4	.4
26	.4	.3	1.0	23	20	83	*117	89	4.8	.4	.5	.4
27	.4	.3	1.0	b20	32	77	233	61	4.2	.4	*.4	.4
28	.4	.3	1.0	20	49	92	255	49	3.9	.4	.5	.4
29	.4	.3	1.2	*21	-	73	140	42	4.2	.4	.5	.4
30	.4	.3	2.1	23	-	66	98	34	3.7	.4	.4	.4
31	.4	-	1.1	22	-	58	-	30	-	.4	.4	-
Total	10.6	10.3	29.0	1,865.2	2,469	1,669	2,569	1,591	767.2	25.1	12.6	12.0
Mean	0.34	0.34	0.94	60.2	88.2	53.8	85.6	51.3	25.6	0.81	0.41	0.40
Ac-ft	21	20	58	3,670	4,900	3,310	5,100	3,160	1,520	50	25	24

Calendar year 1952: **Max** 592 **Min** 0.1 **Mean** 35.2 **Ac-ft** 25,510
Water year 1952-53: **Max** 515 **Min** 0.3 **Mean** 30.2 **Ac-ft** 21,860

Peak discharge (base, 400 cfs).--Jan. 18 (8 p.m.) 745 cfs (5.02 ft); Feb. 3 (6:30 p.m.) 542 cfs (4.19 ft); Feb. 7 (10:30 p.m.) 465 cfs (3.84 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Beaver Creek near Paulina, Oreg.

Location.--Lat 44°09'50", long. 119°55'20", in NE¼ sec. 26, T. 16 S., R. 23 E., on right bank three-quarters of a mile downstream from Paulina Creek, 1¾ miles downstream from Wolf Creek, and 3 miles northeast of Paulina.

Drainage area.--425 sq mi.

Records available.--October 1945 to September 1953 in reports of Geological Survey. October 1941 to September 1945 in files of Bureau of Reclamation.

Gage.--Water-stage recorder. Altitude of gage is 3,690 ft (by barometer).

Average discharge.--12 years, 104 cfs.

Extremes.--Maximum discharge during year, 1,770 cfs Jan. 19 (gage height, 6.73 ft); minimum, 0.5 cfs Oct. 17, 18.
1941-53: Maximum discharge, 4,310 cfs Dec. 28, 1945 (gage height, 10.2 ft), from rating curve extended above 900 cfs on basis of discharge of Crooked River near Post; no flow Oct. 13-29, 1945.

Remarks.--Records good. No regulation. Diversions for irrigation above station, and one on left bank diverting past station for irrigation of about 700 acres.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 7				Feb. 8 to Sept. 30			
0.13	0.4	1.0	51	0.1	0.5	0.7	26
.2	1.0	1.4	105	.2	2.0	1.0	56
.3	3.3	1.8	195	.3	4.6	1.5	135
.4	6.9	3.0	610	.4	8.1	2.0	260
.6	18	5.1	1,260	.5	13	3.5	795
						5.0	1,230

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.9	6.5	5.7	16	195	117	266	304	143	6.5	4.0	0.9
2	3.9	6.5	5.7	16	199	81	252	260	141	5.8	4.3	1.3
3	4.5	6.5	5.7	17	972	79	272	213	*125	5.2	4.9	6.6
4	4.5	7.8	6.1	17	899	93	304	190	110	4.0	5.2	8.6
5	4.5	*7.4	6.5	16	524	100	339	170	103	3.8	5.2	8.6
6	4.5	6.5	7.4	16	845	112	360	165	121	3.5	5.2	8.6
7	4.5	6.9	8.2	18	999	141	314	168	151	3.2	5.2	8.1
8	4.5	7.4	8.7	21	1,030	200	263	165	162	3.2	5.2	7.7
9	4.2	7.4	8.7	232	395	257	229	149	155	3.2	4.9	7.3
10	4.2	7.4	11	181	269	287	210	133	168	3.2	4.9	6.5
11	4.2	7.8	13	119	240	*252	188	112	145	3.0	4.9	6.9
12	3.9	8.2	14	189	198	224	172	95	133	2.7	5.2	6.9
13	2.8	8.7	14	277	188	200	160	85	205	2.3	5.2	6.1
14	2.2	8.7	14	235	175	175	145	82	198	2.3	4.6	5.5
15	3.6	9.2	15	127	153	168	131	92	145	*2.3	2.0	5.5
16	4.5	7.4	13	118	137	158	143	90	127	2.5	.6	5.5
17	2.0	7.4	14	353	149	141	235	84	100	6.1	.6	5.5
18	.5	7.4	14	1,120	115	139	278	88	84	6.5	.6	5.5
19	.6	6.9	*15	1,260	127	147	275	168	64	6.9	.6	5.5
20	.8	6.5	15	795	93	145	308	243	54	6.9	.6	5.5
21	.8	6.1	14	465	90	151	370	210	50	5.8	.6	5.5
22	3.6	6.1	13	267	100	185	395	178	45	5.5	.6	5.2
23	6.1	5.7	13	210	103	284	413	188	39	5.5	.7	5.2
24	6.1	5.7	10	167	88	524	378	249	27	5.5	.7	5.2
25	6.1	5.7	10	150	85	563	339	263	16	5.2	.7	5.2
26	6.1	5.7	12	114	93	374	*328	246	12	5.2	.8	5.2
27	6.1	5.7	14	92	112	350	500	218	6.5	5.2	*.8	5.2
28	6.1	5.7	13	94	155	381	816	182	6.5	5.2	.9	5.2
29	6.1	5.3	13	*100	-	332	560	160	8.6	5.2	.9	5.2
30	6.5	5.3	16	119	-	311	388	145	7.3	4.9	.8	5.2
31	6.5	-	16	135	-	290	-	133	-	4.0	.9	-
Total	128.4	204.5	358.7	7,056	8,728	6,961	9,331	5,228	2,851.9	140.3	82.3	174.9
Mean	4.14	6.82	11.6	228	312	225	311	169	95.1	4.53	2.65	5.83
Ac-ft	255	406	711	14,000	17,310	13,810	18,510	10,370	5,660	278	163	347

Calendar year 1952: Max 2,660 Min 0.4 Mean 148 Ac-ft 107,300
Water year 1952-53: Max 1,260 Min 0.5 Mean 113 Ac-ft 81,820

Peak discharge (base, 600 cfs).--Jan. 19 (4 a.m.) 1,770 cfs (6.73 ft); Feb. 3 (7:30 p.m.) 1,250 cfs (5.08 ft); Feb. 7 (9:30 p.m.) 1,650 cfs (6.41 ft); Mar. 24 (10:30 p.m.) 784 cfs (3.47 ft); Apr. 28 (7 a.m.) 857 cfs (3.69 ft).
* Discharge measurement made on this day.

North Fork Crooked River above Deep Creek, Oreg.

Location.--Lat 44°20', long. 120°05', in SW¼ sec. 21, T. 14 S., R. 22 E., on left bank three-quarters of a mile upstream from Deep Creek, 14 miles northwest of Paulina, and 38 miles east of Prineville.

Drainage area.--159 sq mi.

Records available.--October 1945 to September 1953 in reports of Geological Survey. November 1941 to September 1945 (incomplete) in files of Bureau of Reclamation.

Gage.--Water-stage recorder. Datum of gage is 4,356.00 ft above mean sea level (surveys of Bureau of Reclamation). Prior to Oct. 1, 1946, at datum 0.33 ft higher.

Average discharge.--10 years (1943-53), 98.1 cfs.

Extremes.--Maximum discharge during year, 1,790 cfs Apr. 27 (gage height, 4.19 ft); minimum, 1.0 cfs Oct. 1, 2.
1941-53: Maximum discharge, 2,060 cfs Apr. 7, 1943 (gage height, 4.17 ft), from rating curve extended above 950 cfs; maximum gage height, 8.01 ft Jan. 1, 1943 (present datum, ice jam); minimum discharge, 0.5 cfs Aug. 14, 15, 1942, Aug. 3 to Sept. 24, 1951.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No diversion or regulation above station.

Revisions.--WSP 1094: Drainage area.

Rating table, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.3	0.6	1.1	34
.4	1.5	1.3	57
.5	3.0	1.5	96
.6	5.3	1.8	190
.7	8.2	3.0	820
.9	18		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.1	3.2	3.5	9.5	169	55	400	528	320	29	2.1	5.9
2	1.1	3.0	3.5	9.5	199	60	435	425	*245	23	2.1	5.1
3	1.1	3.2	3.5	9.5	660	65	562	360	204	18	2.6	4.4
4	1.2	3.2	4	9.5	644	60	633	360	204	15	4.2	3.9
5	1.4	*3.5	4.5	9.5	350	70	726	425	180	13	5.9	3.7
6	1.4	3.2	4.5	11	350	110	644	506	226	12	4.8	3.5
7	1.5	3.2	5	15	425	150	410	501	365	9.9	4.4	3.2
8	1.5	3.2	5.5	30	430	250	310	435	275	8.2	4.2	3.5
9	1.5	3.2	5.5	90	270	310	260	360	230	7.0	3.5	3.5
10	1.5	3.9	6	40	180	*375	222	300	222	6.2	3.0	3.2
11	1.5	5.1	6	25	180	310	185	255	169	5.6	2.8	3.0
12	1.5	6.2	6.5	b45	129	265	190	235	186	4.8	2.7	2.8
13	1.5	7.6	6.5	b90	135	203	166	240	375	4.4	2.6	2.7
14	1.5	7.6	6.5	b80	122	142	166	290	226	*3.9	2.4	2.7
15	1.5	b5.5	6	b70	94	148	222	295	180	4.2	2.2	2.6
16	1.5	b4.5	6	b60	106	142	325	280	158	3.9	2.2	2.7
17	1.6	b4.5	6	b80	96	106	490	300	132	4.2	2.2	2.6
18	1.8	b4.5	*6	b300	62	117	474	300	106	4.2	2.0	2.6
19	1.8	b4.5	6	b450	75	114	594	468	92	3.7	2.0	2.7
20	2.0	b4.5	6	b650	70	78	682	446	89	3.2	2.4	2.7
21	2.1	b4	6	562	65	81	792	380	78	3.2	2.1	2.7
22	2.0	b4	5.5	405	70	94	809	325	66	3.2	2.2	2.7
23	1.8	3.5	5	270	60	195	868	345	57	3.2	2.4	2.8
24	1.8	3.5	4.5	222	55	389	748	345	52	3.0	3.0	3.0
25	2.2	3.5	6	169	60	506	*682	275	49	3.0	3.5	3.2
26	2.7	3.5	6	125	60	420	754	365	41	3.0	5.3	3.2
27	2.7	3.5	6.5	142	60	474	1,460	375	34	2.6	7.9	3.2
28	2.8	3.5	7	129	60	584	1,320	290	31	2.8	*7.3	3.2
29	2.8	3.5	7.5	119	-	457	856	245	33	2.4	9.1	3.5
30	3.0	3.5	8	*119	-	468	716	217	32	2.2	11	3.7
31	3.0	-	8.5	122	-	425	-	212	-	2.2	7.3	-
Total	56.4	123.3	177.5	4,467.5	5,236	7,223	17,101	10,683	4,657	214.2	121.4	98.2
Mean	1.82	4.11	5.73	144	187	233	570	345	155	6.91	3.92	3.27
Ac-ft	112	245	352	8,860	10,390	14,330	33,920	21,190	9,240	425	241	195

Calendar year 1952: **Max** 1,600 **Min** 0.7 **Mean** 117 **Ac-ft** 85,200
Water year 1952-53: **Max** 1,460 **Min** 1.1 **Mean** 137 **Ac-ft** 99,500

Peak discharge (base, 850 cfs).--Feb. 3 (5 p.m.) 1,250 cfs (3.60 ft); Apr. 6 (1:30 a.m.) 856 cfs (3.06 ft); Apr. 27 (5 p.m.) 1,790 cfs (4.19 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Nov. 23 to Jan. 11, Feb. 19 to Mar. 8; discharge estimated on basis of weather records and records for station below Deep Creek and Beaver Creek near Paulina.

North Fork Crooked River below Deep Creek, Oreg.

Location.--Lat 44°19', long. 120°05', in SW¼ sec. 27, T. 14 S., R. 22 E., on left bank a quarter of a mile downstream from Deep Creek, 14 miles northwest of Paulina, and 38 miles east of Prineville.

Drainage area.--264 sq mi.

Records available.--September 1946 to September 1953 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 4,320 ft (by barometer).

Average discharge.--7 years, 189 cfs.

Extremes.--Maximum discharge during year, 5,000 cfs Apr. 27 (gage height, 8.01 ft); minimum, 8.0 cfs Nov. 2 (gage height, 1.11 ft).
1946-53: Maximum discharge, that of Apr. 27, 1953; minimum, 7 cfs for many days during period July to September 1947 and for Aug. 3, 4, 5, 6, 1949.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No diversion or regulation above station.

Rating table, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	7.7	4.0	485
1.3	14	4.5	700
1.5	26	5.0	1,000
2.0	60	6.0	1,820
2.5	108	7.0	3,150
3.0	190	7.6	4,170
3.5	310		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.1	12	b11	b30	255	93	606	937	553	56	10	16
2	9.1	b10	b11	b30	295	97	673	761	*420	51	9.9	15
3	8.8	b11	b11	b30	1,100	104	930	700	350	46	11	13
4	8.8	b11	b12	b30	979	95	1,120	788	337	41	14	12
5	9.1	*b12	b13	b30	561	97	1,390	910	295	38	17	12
6	9.1	b11	b14	b35	529	109	1,170	993	368	36	14	12
7	9.4	b11	b16	b45	596	135	745	930	537	32	13	13
8	9.4	b11	a16	91	583	218	549	766	420	25	12	12
9	9.4	b11	a17	158	382	385	457	624	358	24	12	12
10	9.4	13	a18	89	288	*537	392	525	334	21	11	12
11	9.4	14	a19	41	275	428	328	473	270	19	10	11
12	9.7	18	a20	54	202	372	325	457	292	18	10	11
13	9.7	21	a20	132	204	295	295	465	509	16	9.9	10
14	9.7	20	a20	113	186	227	295	533	328	*16	9.7	10
15	9.7	16	a20	92	138	230	400	513	272	16	9.4	10
16	9.9	b14	a20	85	148	218	632	497	245	16	9.4	10
17	9.9	b14	a18	116	140	174	898	505	200	15	9.4	10
18	9.9	b14	b18	544	103	180	1,010	505	162	15	9.1	10
19	9.9	b13	b18	a700	122	180	1,410	766	141	14	9.1	10
20	10	b13	b18	a900	108	136	1,780	686	134	13	9.7	10
21	10	b12	b18	a750	106	134	2,070	610	119	13	9.7	10
22	10	b12	b17	a550	114	146	2,170	533	104	13	9.4	10
23	10	b11	b17	a450	103	257	2,200	553	92	13	9.4	11
24	10	b11	b14	a320	94	539	1,770	578	86	12	13	11
25	10	b11	b18	a250	97	730	*1,640	477	80	12	12	11
26	11	b11	b18	a170	98	628	1,820	574	72	12	21	11
27	11	b11	b19	a200	103	730	4,150	574	65	11	23	11
28	11	b11	b20	a180	100	659	2,880	461	62	11	*23	12
29	12	b10	b22	a160	-	691	1,660	406	64	11	28	12
30	12	b10	b24	*150	-	691	1,270	368	60	10	26	12
31	12	-	b26	168	-	628	-	402	-	10	19	-
Total	308.4	380	543	6,693	8,009	10,343	37,035	18,870	7,329	656	413.1	342
Mean	9.95	12.7	17.5	216	286	334	1,234	609	244	21.2	13.3	11.4
Ac-ft	612	754	1,080	13,280	15,890	20,520	73,460	37,430	14,540	1,300	819	678

Calendar year 1952: Max 3,010 Min 8 Mean 214 Ac-ft 155,600
Water year 1952-53: Max 4,150 Min 8.8 Mean 249 Ac-ft 180,400

Peak discharge (base, 1,400 cfs).--Feb. 3 (5 p.m.) 1,810 cfs (5.99 ft); Apr. 5 (12 p.m.) 1,600 cfs (5.77 ft); Apr. 27 (8 p.m.) 5,000 cfs (8.01 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for station above Deep Creek, Beaver Creek near Paulina, and Crooked River near Post.

b Stage-discharge relation affected by ice.

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Crooked River near Post, Oreg.

Location.--Lat 44°07'00", long. 120°16'50", in NW¼NW¼ sec. 7, T. 17 S., R. 21 E., on right bank 1 mile downstream from North Fork and 11½ miles southeast of Post.

Drainage area.--2,160 sq mi, approximately, of which 500 sq mi is probably noncontributing.

Records available.--November 1908 to August 1911, December 1939 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 3,461.72 ft above mean sea level, datum of 1929. Prior to Dec. 30, 1939, staff gage at site half a mile upstream at different datum.

Average discharge.--13 years (1940-53), 348 cfs.

Extremes.--Maximum discharge during year, 5,220 cfs Apr. 28 (gage height, 6.20 ft); minimum, 4 cfs Aug. 20.
1908-11, 1939-53: Maximum discharge, 7,550 cfs Mar. 26, 1952 (gage height, 7.31 ft), from rating curve extended above 3,800 cfs; minimum, that of Aug. 20, 1953.

Remarks.--Records good except those for periods of ice effect and those for July and August, which are fair.

Rating tables, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 27				Apr. 28 to Sept. 30			
1.0	16	3.0	570	0.8	5	1.5	58
1.2	31	3.5	980	1.0	16	2.0	185
1.4	51	4.0	1,540	1.2	32	2.5	350
1.7	101	5.0	2,990				
2.0	177	6.0	4,800	Note.--Same as preceding table above 2.5 ft.			
2.5	350						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	44	65	90	565	358	1,090	1,350	756	106	16	37
2	22	44	65	90	644	287	1,110	1,110	618	100	16	30
3	20	48	65	85	2,000	269	1,360	940	*530	85	16	28
4	20	51	70	80	2,230	298	1,580	940	502	72	19	28
5	20	52	65	85	1,520	290	1,810	1,050	462	68	26	30
6	21	*54	70	90	1,730	320	1,740	1,110	488	63	30	30
7	21	52	75	100	2,010	386	1,300	1,070	748	57	30	32
8	21	51	70	150	2,280	516	1,020	940	700	47	21	35
9	21	50	80	450	1,300	764	840	772	624	38	17	44
10	20	54	80	511	870	1,090	820	651	600	36	15	42
11	20	57	85	354	748	*890	637	576	525	36	13	41
12	19	64	84	466	588	764	612	535	502	32	13	30
13	20	77	75	618	560	644	560	525	860	28	10	26
14	21	77	75	588	516	530	520	550	724	32	9.5	27
15	23	68	75	410	448	525	576	600	550	32	10	28
16	24	59	77	358	406	493	780	576	493	*29	10	28
17	25	54	70	639	439	418	1,220	576	406	28	10	27
18	28	67	68	1,960	354	426	1,320	565	340	27	7.5	24
19	28	59	*68	2,300	366	422	1,650	790	287	27	7	23
20	28	67	68	1,870	308	406	1,920	1,050	256	30	8	25
21	37	57	70	1,660	287	398	2,320	890	236	28	8	26
22	37	45	75	1,110	308	439	2,460	772	215	24	6	28
23	37	50	55	780	312	769	2,560	756	191	23	9.5	27
24	39	65	60	651	239	1,350	2,140	860	169	23	13	28
25	40	65	70	560	258	1,680	1,910	820	153	21	16	32
26	41	50	80	448	280	1,350	*1,950	870	132	20	*23	32
27	42	45	80	354	308	1,320	3,940	900	121	18	30	32
28	43	55	75	366	386	1,550	3,820	724	110	18	36	32
29	43	55	85	*362	-	1,280	2,360	612	116	16	60	35
30	43	65	85	402	-	1,280	1,810	555	112	16	52	35
31	44	-	85	434	-	1,170	-	511	-	16	47	-
Total	892	1,701	2,270	18,421	22,290	22,682	47,735	24,546	12,526	1,196	604.5	920
Mean	28.8	56.7	73.2	594	796	732	1,591	792	418	38.6	19.5	30.7
Ac-ft	1,770	3,370	4,500	36,540	44,210	44,990	94,680	48,690	24,840	2,370	1,200	1,820

Calendar year 1952: Max 6,230 Min 16 Mean 447 Ac-ft 324,800
Water year 1952-53: Max 3,940 Min 6 Mean 427 Ac-ft 309,000

Peak discharge (base, 2,000 cfs).--Jan. 18 (8 p.m.) 3,300 cfs (5.18 ft); Feb. 3 (9 p.m.) 2,890 cfs (4.94 ft); Feb. 7 (8 p.m.) 2,690 cfs (4.82 ft); Apr. 23 (2 a.m.) 3,160 cfs (5.10 ft); Apr. 28 (12:30 to 1:30 a.m.) 5,220 cfs (6.20 ft).
* Discharge measurement made on this day.
Note.--Stage-discharge relation affected by ice Nov. 22 to Dec. 11, Dec. 21 to Jan. 9.

Crooked River above Hoffman Dam, near Prineville, Oreg.

Location.--Lat 44°08'40", long. 120°49'40", in NE¼ sec. 32, T. 16 S., R. 16 E., on right bank 0.9 mile upstream from Hoffman diversion dam and 11 miles south of Prineville.

Drainage area.--2,810 sq mi, approximately, of which 500 sq mi is probably noncontributing.

Records available.--October 1908 to September 1914, January 1940 to February 1941 (discharge measurements only), March 1941 to September 1953. Published as "near Prineville" October 1908 to December 1912 and as "at Hoffman's Ranch, near Prineville" January 1913 to September 1914.

Gage.--Water-stage recorder. Datum of gage is 2,981.23 ft above mean sea level, datum of 1929. Prior to December 1912, staff gage at site at Stearns Ranch, 5½ miles downstream at different datum. January 1913 to September 1914 staff gage at site at Hoffman Ranch, 1 mile downstream, below Hoffman diversion, at different datum.

Average discharge.--18 years (1908-14, 1941-53), 391 cfs.

Extremes.--Maximum discharge during year, 5,110 cfs Apr. 28 (gage height, 6.57 ft); minimum, 12 cfs Oct. 1.
1908-14, 1940-53: Maximum discharge observed, 9,080 cfs Mar. 1, 2, 1910 (gage height, 9.4 ft, site and datum then in use), from rating curve extended above 1,000 cfs; no flow at times in 1940.

Remarks.--Records good. Diversions above station for irrigation. No regulation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.2	12	3.0	565
1.4	28	4.0	1,460
1.7	68	5.0	2,700
2.0	128	7.0	5,870
2.5	281		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	48	73	102	482	420	1,240	1,780	734	140	25	62
2	22	47	75	106	628	365	1,190	1,420	807	133	26	55
3	22	52	75	98	1,260	325	1,340	1,190	688	128	26	48
4	23	51	75	98	2,710	325	1,670	1,080	*621	119	24	43
5	23	54	77	90	1,980	340	1,930	1,140	593	110	22	39
6	21	58	73	94	1,880	345	2,130	1,210	565	104	32	37
7	20	*62	82	100	2,140	392	1,650	1,230	816	100	27	39
8	19	60	86	113	2,840	482	1,280	1,140	1,040	90	28	39
9	18	58	70	218	1,840	710	1,020	994	850	81	29	39
10	23	57	92	665	1,120	1,060	893	816	782	75	27	36
11	23	58	94	420	858	1,040	790	710	726	70	27	43
12	23	70	98	355	766	*875	718	635	642	63	26	40
13	22	82	92	516	650	774	688	600	1,120	58	26	39
14	22	90	86	600	614	658	642	600	1,110	52	27	34
15	20	90	86	482	579	586	628	665	807	51	24	31
16	20	84	84	365	489	579	758	642	665	*47	24	31
17	23	77	85	386	502	544	1,160	635	586	48	24	31
18	25	68	80	1,160	489	482	1,420	628	482	44	24	31
19	26	73	75	2,710	425	489	1,740	710	403	43	23	31
20	28	75	*75	2,070	414	516	2,140	1,130	360	43	30	30
21	30	77	79	2,020	365	476	2,600	1,020	325	39	24	28
22	30	72	79	1,340	350	482	2,760	938	299	44	24	30
23	37	40	90	947	365	650	2,870	824	266	39	23	31
24	39	46	39	750	360	1,490	2,590	947	240	35	22	30
25	42	55	45	650	312	1,960	2,270	920	223	35	21	30
26	43	62	65	558	316	1,720	2,180	956	201	34	*27	32
27	44	49	92	463	335	1,460	*3,080	1,060	177	30	31	36
28	48	48	94	*392	392	1,700	4,800	974	169	27	30	36
29	48	63	88	386	-	1,570	3,260	782	160	25	46	37
30	49	57	98	397	-	1,440	2,390	695	155	25	73	37
31	49	-	94	431	-	1,340	-	642	-	25	68	-
Total	897	1,883	2,496	19,082	25,461	25,595	53,627	28,713	16,612	1,957	910	1,105
Mean	28.9	62.8	80.5	616	909	826	1,788	926	554	63.1	29.4	36.8
Ac-ft	1,780	3,730	4,950	27,850	50,500	50,770	106,400	56,950	32,950	3,880	1,800	2,190

Calendar year 1952: Max 7,200 Min 7.5 Mean 504 Ac-ft 366,100
Water year 1952-53: Max 4,600 Min 15 Mean 489 Ac-ft 353,800

Peak discharge (base, 2,500 cfs).--Jan. 19 (6 a.m.) 3,090 cfs (5.28 ft); Feb. 4 (8 a.m.) 3,110 cfs (5.29 ft); Feb. 9 (6 a.m.) 3,180 cfs (5.34 ft); Apr. 28 (2:30 p.m.) 5,110 cfs (6.57 ft).
* Discharge measurement made on this day.

Crooked River near Culver, Oreg.

Location.--Lat 44°33'35", long. 121°16'10", in sec. 3 (50 ft west of ¼-corner on line between secs. 2 and 3), T. 12 S., R. 12 E., on right bank 1 mile upstream from mouth, 1 mile downstream from Cove powerplant, and 4 miles northwest of Culver.

Drainage area.--4,330 sq mi, approximately, of which 500 sq mi is probably noncontributing.

Records available.--October 1917 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 1,664.86 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Aug. 2, 1945, staff gages at several sites within 1 mile of present site at various datums.

Average discharge.--36 years, 1,513 cfs.

Extremes.--Maximum discharge during year, 6,170 cfs Apr. 29 (gage height, 6.98 ft); minimum, 1,070 cfs Aug. 13; minimum daily, 1,300 cfs Dec. 25-28.
1917-53: Maximum discharge observed, 8,260 cfs Mar. 30, 31, 1943 (gage height, 6.70 ft, site and datum then in use); minimum, 920 cfs Oct. 14, 1945 (gage height, 1.67 ft); minimum daily, 970 cfs July 12 to Sept. 5, 1921.

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Flow slightly regulated by Ochoco Reservoir (capacity, 47,500 acre-ft); occasional diurnal fluctuation caused by powerplant 1 mile above station. Summer flow above Prineville affected by diversions for irrigation and return flow from irrigated areas. Springs increase flow about 1,000 cfs within an area extending 17 miles above station. Records of water temperatures for the water year 1953 are given in WSP 1293.

Revisions (water years).--WSP 864: 1922, 1925, 1928, 1932, 1936-37.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

2.4	1,260
3.0	1,640
5.0	3,580
7.0	6,200

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,390	1,460	1,410	1,430	1,850	1,810	2,830	4,000	2,300	1,450	1,360	1,520
2	1,400	1,480	1,420	a1,500	1,940	1,810	2,770	3,370	2,450	1,420	1,360	1,500
3	1,400	1,450	1,420	a1,600	2,110	1,760	2,720	3,000	2,410	1,400	1,380	1,480
4	1,400	a1,400	1,420	a1,600	3,190	1,700	2,850	2,780	*2,270	1,390	1,390	1,460
5	1,400	a1,350	1,440	a1,550	4,050	1,700	3,150	2,650	2,180	1,400	1,390	1,440
6	1,400	a1,350	1,470	a1,500	3,480	1,700	3,450	2,680	2,190	1,410	1,400	1,400
7	1,390	a1,400	1,480	a1,500	3,600	1,700	3,530	2,730	2,240	1,410	1,400	1,430
8	1,390	a1,400	1,420	a1,500	3,930	1,760	3,040	2,740	2,680	1,440	1,400	1,430
9	1,390	a1,400	1,410	a1,500	4,200	1,870	2,710	2,650	2,680	1,460	1,400	1,430
10	1,390	1,430	1,420	a1,600	3,120	2,120	2,500	2,500	2,550	1,430	1,400	1,440
11	1,390	1,430	1,430	a1,850	2,570	2,470	2,350	2,340	2,470	1,390	1,390	1,440
12	1,400	*1,420	1,420	a2,000	2,360	*2,390	2,220	2,190	2,410	1,390	1,400	1,440
13	1,400	1,430	1,420	a1,800	2,200	2,250	2,170	2,100	2,580	1,530	1,380	1,440
14	1,390	1,440	1,420	a1,900	2,100	2,150	2,100	2,040	2,990	2,040	1,380	1,440
15	1,400	1,450	1,420	a1,850	2,040	2,040	2,020	2,040	2,790	1,890	1,380	1,420
16	1,410	1,450	*1,410	a1,750	1,980	1,990	2,030	2,110	2,520	1,550	1,390	1,410
17	1,410	1,440	1,410	1,700	1,920	1,950	2,150	2,050	2,360	*1,960	1,380	1,410
18	1,410	1,440	1,410	1,790	1,940	1,920	2,560	2,050	2,190	1,910	1,360	1,410
19	1,420	1,430	1,410	2,960	1,880	1,890	2,750	2,070	2,040	1,860	1,370	1,420
20	1,420	1,420	1,420	3,880	1,820	1,900	3,100	2,280	1,910	1,550	1,380	1,410
21	1,410	1,430	1,410	3,460	1,790	1,900	3,440	2,680	1,820	1,370	1,390	1,410
22	1,400	1,420	a1,350	3,260	1,750	1,850	3,870	2,570	1,770	1,370	1,400	1,420
23	1,410	1,420	a1,400	2,660	1,740	1,870	4,020	2,540	1,700	1,360	1,410	1,420
24	1,420	1,400	a1,350	2,320	1,740	2,280	4,170	2,470	1,630	1,360	1,420	1,410
25	1,410	1,390	a1,300	2,170	1,730	2,970	3,940	2,600	1,610	1,350	*1,420	1,410
26	1,410	1,400	a1,300	2,070	1,690	3,280	3,630	2,630	1,600	1,350	1,450	1,420
27	1,420	1,400	a1,300	1,970	1,690	2,990	3,650	2,750	1,560	1,360	1,490	1,440
28	1,430	1,400	a1,300	*1,900	1,740	2,840	*4,640	2,840	1,540	1,360	1,470	1,440
29	1,450	1,400	a1,350	1,820	-	3,110	5,930	2,680	1,540	1,370	1,540	1,440
30	1,460	1,400	a1,350	1,780	-	2,850	4,920	2,460	1,490	1,350	1,540	1,440
31	1,460	-	a1,400	1,810	-	2,890	-	2,360	-	1,350	1,510	-
Total	43,680	42,530	43,290	62,080	66,150	67,710	95,210	78,950	64,470	46,230	43,730	43,050
Mean	1,409	1,418	1,396	2,003	2,362	2,184	3,174	2,547	2,149	1,491	1,411	1,435
Ac-ft	86,640	84,360	85,860	123,100	131,200	134,300	188,800	156,600	127,900	91,700	86,740	85,390

Calendar year 1952: Max 7,860 Min 1,290 Mean 1,885 Ac-ft 1,368,000
Water year 1952-53: Max 5,930 Min 1,300 Mean 1,910 Ac-ft 1,383,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for stations above Hoffman Dam near Prineville and Deschutes River near Madras and near Culver.

Lake Creek near Sisters, Oreg.

Location.--Lat 44°25'40", long. 121°43'30", in SW¼ sec. 24, T. 13 S., R. 8 E., on left bank a quarter of a mile downstream from Suttle Lake, 6 miles upstream from mouth, and 13 miles northwest of Sisters.

Drainage area.--22.2 sq mi.

Records available.--1911-13 (occasional readings during summers), April 1915 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 3,430 ft (from topographic map). May 31, 1911, to Oct. 30, 1913, and Apr. 7, 1915, to Mar. 31, 1916, staff gages at two sites 1,000 ft upstream at different datums. Apr. 1, 1916, to Oct. 12, 1928, staff gage or water-stage recorder at site 40 ft downstream at different datum.

Average discharge.--37 years (1915-18, 1919-53), 50.5 cfs.

Extremes.--Maximum discharge during year, 313 cfs Jan. 20 (gage height, 3.38 ft); minimum, 28 cfs July 23 (gage height, 0.91 ft).
1911-13, 1915-53: Maximum discharge, 351 cfs Dec. 16, 1946 (gage height, 3.50 ft); minimum, 1.0 cfs Nov. 4, 5, 1940; minimum daily, 8 cfs Nov. 5, 1940, Oct. 6, 1942.

Remarks.--Records good. No diversion above station. Occasional regulation by storage in Suttle Lake.

Revisions (water years).--WSP 1124: 1943, 1947. WSP 1218: Drainage area.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 20		Jan. 21 to Sept. 30			
1.0	31	0.9	27	2.0	113
1.5	65	1.0	33	3.0	259
2.0	113	1.5	67	3.2	295
3.1	277				

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	35	36	39	114	73	*56	76	89	63	40	43
2	35	36	38	41	122	71	56	68	88	63	45	42
3	35	36	45	41	140	67	56	69	87	60	*45	42
4	35	36	49	41	157	64	56	70	86	58	44	42
5	35	36	46	39	190	63	56	71	85	54	44	43
6	36	35	44	39	201	61	56	74	82	50	45	43
7	*36	35	49	40	214	61	56	79	83	51	44	41
8	36	35	49	44	222	61	56	82	85	52	44	34
9	36	35	45	59	*215	60	56	85	91	51	43	38
10	36	35	44	59	196	60	56	85	93	*52	43	36
11	35	35	44	56	178	61	56	83	96	50	43	41
12	35	37	43	58	162	*62	57	82	97	50	43	33
13	36	38	41	59	148	61	57	82	94	49	36	36
14	35	38	40	*57	135	59	56	80	92	49	37	*44
15	35	39	39	58	125	59	55	80	90	49	44	44
16	36	38	38	70	117	61	55	80	87	50	42	43
17	36	*36	38	82	121	63	55	80	86	50	43	42
18	36	36	*38	118	113	61	53	84	83	47	43	42
19	35	35	38	169	102	61	53	*87	84	48	39	41
20	36	35	38	273	94	61	54	92	85	47	43	41
21	35	34	38	288	88	65	55	99	81	46	43	30
22	36	34	39	286	85	64	56	100	82	46	43	32
23	36	33	38	252	81	61	57	101	*79	37	43	33
24	35	33	38	220	78	59	57	100	75	32	42	35
25	35	33	38	198	75	58	60	97	71	34	42	38
26	35	33	37	181	73	58	63	97	70	38	44	40
27	35	33	36	155	71	57	67	93	69	37	44	43
28	35	33	37	139	79	57	69	89	67	41	43	40
29	35	33	38	130	-	56	72	88	67	46	43	40
30	35	33	38	118	-	56	75	87	66	46	43	40
31	35	-	38	115	-	56	-	88	-	44	43	-
Total	1,097	1,053	1,257	3,524	3,696	1,897	1,742	2,628	2,490	1,490	1,323	1,182
Mean	35.4	35.1	40.5	114	132	61.2	58.1	84.8	83.0	48.1	42.7	39.4
Ac-ft	2,180	2,090	2,490	6,990	7,330	3,760	3,460	5,210	4,940	2,960	2,620	2,340

Calendar year 1952: Max 139 Min 33 Mean 55.9 Ac-ft 40,560
Water year 1952-53: Max 288 Min 30 Mean 64.1 Ac-ft 46,370

* Discharge measurement made on this day.

Metolius River near Grandview, Oreg.

Location.--Lat 44°36'40", long. 121°27'10", in NE¼ sec. 19, T. 11 S., R. 11 E., on right bank at Montgomery Ranch, 8 miles northwest of Grandview and 13 miles northwest of Culver.

Drainage area.--324 sq mi (hydrologic drainage boundary uncertain owing to ground-water exchange).

Records available.--April 1910 to February 1912 (gage height only), March 1912 to December 1913, October 1921 to September 1953. Prior to October 1921, published as "at Hubbards Ranch."

Gage.--Water-stage recorder. Datum of gage is 1,910 ft (river-profile survey). Apr. 24, 1910, to Dec. 30, 1913, staff gage at site 5 miles upstream at different datum. Oct. 1, 1921, to May 3, 1949, staff gage at site 20 ft downstream at same datum.

Average discharge.--32 years (1921-53), 1,437 cfs.

Extremes.--Maximum discharge during year, 3,360 cfs Jan. 19 (gage height, 2.20 ft), from rating curve extended above 2,100 cfs; minimum, 1,440 cfs Nov. 28, 30.
1921-53: Maximum discharge, 5,780 cfs Jan. 7, 1923 (gage height, 3.32 ft), from rating curve extended above 2,200 cfs; minimum, 1,080 cfs Feb. 17, 1932, Oct. 2-31, Nov. 6, 7, 10-14, 1942.

Remarks.--Records excellent. No diversion or regulation above station. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18		Jan. 19 to Sept. 30	
0.5	1,370	0.5	1,460
1.9	2,910	1.0	2,010
		1.8	3,010

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,520	1,480	1,480	1,480	2,210	1,810	1,680	1,710	1,780	1,780	1,690	1,610
2	1,520	1,480	1,470	1,540	2,210	1,800	1,670	1,690	1,770	1,780	1,690	1,610
3	1,520	1,480	1,470	1,520	2,630	1,780	1,660	1,670	1,760	1,810	1,700	1,580
4	1,510	1,480	1,510	1,500	2,530	1,770	1,660	1,690	1,750	1,820	1,700	1,580
5	1,510	1,470	1,490	1,480	2,460	1,760	1,650	1,710	*1,760	1,820	1,710	1,580
6	1,510	1,470	1,510	1,480	2,670	1,750	1,650	1,770	1,790	1,830	1,720	1,580
7	1,510	*1,470	1,550	1,510	2,650	1,750	1,640	1,770	1,830	1,860	1,710	1,580
8	1,510	1,480	1,500	1,610	2,560	1,740	1,640	1,760	1,800	1,890	1,710	1,570
9	1,510	1,480	1,490	2,050	2,420	1,740	1,640	1,740	1,780	1,860	1,690	1,570
10	1,500	1,480	1,510	1,790	2,320	1,740	1,620	1,710	1,780	1,830	1,680	1,570
11	1,500	1,480	1,550	1,740	2,230	1,740	1,620	1,700	1,800	1,840	1,670	1,570
12	1,500	1,490	1,560	2,020	2,160	1,740	1,620	1,700	1,820	1,870	1,670	1,560
13	1,500	1,500	1,510	1,980	2,120	*1,720	1,620	1,700	1,820	1,880	1,670	1,570
14	1,490	1,490	1,490	1,790	2,090	1,710	1,610	1,700	1,810	1,880	1,660	1,580
15	1,490	1,480	1,480	1,700	2,040	1,710	1,600	1,710	1,830	1,830	1,670	1,580
16	1,490	1,480	1,470	1,770	2,030	1,720	1,600	1,710	1,820	1,780	1,670	1,570
17	1,490	1,470	*1,470	2,000	2,200	1,720	1,600	1,740	1,830	*1,770	1,660	1,570
18	1,490	1,470	1,470	2,840	2,080	1,720	1,600	1,790	1,840	1,770	1,660	1,570
19	1,490	1,470	1,460	3,000	2,000	1,720	1,600	1,930	1,820	1,780	1,660	1,570
20	1,490	1,470	1,460	2,840	1,970	1,740	1,620	1,870	1,780	1,750	1,660	1,560
21	1,490	1,470	1,460	2,650	1,930	1,740	1,660	1,830	1,770	1,720	1,650	1,550
22	1,490	1,460	1,460	2,470	1,910	1,750	1,690	1,790	1,780	1,720	1,620	1,550
23	1,490	1,460	1,460	2,450	1,880	1,750	1,740	1,790	1,790	1,720	1,610	1,550
24	1,490	1,460	1,450	2,310	1,870	1,750	1,710	1,770	1,770	1,700	1,620	1,550
25	1,480	1,460	1,450	2,240	1,860	1,750	1,710	1,760	1,780	1,700	*1,620	1,550
26	1,480	1,450	1,450	2,160	1,830	1,720	1,750	1,810	1,780	1,690	1,710	1,550
27	1,480	1,450	1,450	*2,080	1,830	1,710	*1,610	1,780	1,790	1,690	1,650	1,560
28	1,480	1,450	1,460	2,050	1,830	1,710	1,780	1,760	1,800	1,690	1,650	1,580
29	1,480	1,450	1,480	2,080	-	1,700	1,760	1,780	1,790	1,700	1,640	1,560
30	1,480	1,450	1,480	2,080	-	1,700	1,740	1,780	1,780	1,710	1,620	1,560
31	1,480	-	1,470	2,110	-	1,690	-	1,770	-	1,700	1,610	-
Total	46,370	44,130	45,970	62,320	60,520	53,850	49,950	54,390	53,800	55,170	51,650	47,110
Mean	1,496	1,471	1,483	2,010	2,161	1,737	1,665	1,755	1,793	1,780	1,666	1,570
Ac-ft	91,970	87,530	91,180	123,600	120,000	106,800	99,070	107,900	106,700	109,400	102,400	93,440

Calendar year 1952: Max 2,050 Min 1,410 Mean 1,640 Ac-ft 1,191,000
Water year 1952-53: Max 3,000 Min 1,450 Mean 1,713 Ac-ft 1,240,000

* Discharge measurement made on this day.

Deschutes River near Madras, Oreg.

Location.--Lat 44°42'30", long. 121°14'10", in NE¼ sec. 13, T. 10 S., R. 12 E., on right bank 1 mile downstream from Pelton dam site, 5 miles upstream from Shitike Creek, 7½ miles northwest of Madras and at mile 101.6 (river-profile survey).

Drainage area.--7,900 sq mi, approximately.

Records available.--October 1923 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 1,407.35 ft above mean sea level (levels by Ebasco Services, Inc.). Prior to May 5, 1924, staff gage, and May 5, 1924, to June 5, 1933, water-stage recorder, at site 1 mile upstream at different datum.

Average discharge.--30 years, 4,313 cfs.

Extremes.--Maximum discharge during year, 9,570 cfs Jan. 20 (gage height, 5.23 ft); minimum, 3,720 cfs Oct. 10 (gage height, 1.97 ft).
1923-53: Maximum discharge, 13,300 cfs Jan. 1, 1943 (gage height, 6.89 ft); minimum, 2,940 cfs Sept. 20, 1942 (gage height, 1.41 ft).

Remarks.--Records excellent. Large diversions in upper river basin for irrigation. Some winter and spring runoff stored in Crescent Lake and in Crane Prairie, Wickiup, and Ochoco Reservoirs. Slight fluctuations caused by powerplants on Deschutes River near Redmond and Crooked River near Culver. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.9	3,610
3.0	5,350
4.0	7,120
5.5	10,100

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,920	4,090	4,420	3,940	6,190	5,330	6,680	6,970	5,570	4,420	4,080	4,800
2	3,900	4,420	4,240	4,080	6,250	5,320	6,250	6,250	5,590	4,420	4,090	4,740
3	3,880	4,140	4,000	4,100	7,180	5,400	6,210	5,830	5,500	4,400	4,140	4,560
4	3,860	*4,090	4,000	4,320	8,120	5,400	6,320	5,570	5,300	4,430	4,150	4,420
5	3,850	4,100	3,960	4,370	8,920	5,400	6,590	5,420	5,160	4,500	4,240	4,340
6	3,840	4,260	4,100	4,400	8,820	5,400	6,770	5,400	5,180	4,530	4,340	4,320
7	3,780	4,420	4,630	4,510	8,840	5,380	6,910	5,400	5,400	4,550	4,390	4,310
8	3,740	4,420	4,480	4,670	9,130	5,350	6,350	5,440	5,790	4,580	4,390	4,270
9	3,740	4,420	4,480	5,590	9,200	*5,550	6,010	5,330	5,830	4,510	4,340	4,230
10	3,730	4,450	4,580	5,300	8,080	5,810	5,780	5,150	5,710	4,420	4,290	4,180
11	3,740	4,450	4,580	5,570	7,290	6,000	5,570	5,010	*5,640	4,390	4,260	4,090
12	3,760	4,470	4,630	5,660	6,930	5,930	5,400	4,900	5,710	4,430	4,240	4,030
13	3,780	4,480	4,530	5,720	6,710	5,760	5,200	4,800	5,910	4,550	4,200	4,100
14	3,780	4,500	4,470	5,640	6,480	5,620	5,040	4,750	6,390	5,210	4,100	4,120
15	3,820	4,500	*4,430	5,550	6,340	5,520	4,870	4,880	6,300	5,080	4,100	4,100
16	3,860	4,480	4,450	5,450	6,170	5,590	4,790	4,900	5,910	4,550	4,120	4,080
17	3,920	4,430	4,480	5,600	6,390	5,590	4,820	4,900	5,590	4,830	4,090	4,040
18	3,920	4,430	4,480	6,970	6,260	5,590	5,160	4,880	5,330	*4,750	4,060	4,040
19	3,920	4,430	4,470	8,980	6,030	5,540	5,320	4,960	5,080	4,750	4,080	4,040
20	4,100	4,420	4,480	9,430	5,860	5,600	5,600	5,200	4,870	4,480	4,100	4,020
21	4,200	4,400	4,470	8,800	5,840	5,590	5,890	5,590	4,790	4,140	4,100	3,960
22	4,160	4,340	4,470	8,240	5,910	5,540	6,370	5,520	4,750	4,090	4,100	4,020
23	4,100	4,320	4,420	7,460	5,840	5,550	6,590	5,520	4,610	4,100	4,200	4,150
24	4,090	4,320	4,400	6,570	5,790	5,890	6,680	5,520	4,450	4,030	*4,200	4,100
25	4,080	4,320	4,340	6,230	5,740	6,620	6,460	5,720	4,420	3,980	4,160	4,100
26	4,060	4,340	4,400	*6,000	5,640	6,930	6,260	6,080	4,370	4,020	4,420	4,140
27	4,060	4,340	4,420	5,760	5,320	6,700	6,390	6,320	4,400	4,030	4,610	4,160
28	4,060	4,320	4,420	5,880	5,320	6,480	*7,220	6,430	4,470	4,040	4,640	4,180
29	4,100	4,320	4,500	5,890	-	6,770	8,760	6,210	4,500	4,040	4,800	4,160
30	4,120	4,320	4,240	5,860	-	6,680	7,980	5,840	4,430	4,030	4,820	4,200
31	4,060	-	4,000	5,910	-	6,700	-	5,660	-	4,040	4,770	-
Total	121,930	130,740	135,970	182,450	190,590	180,530	184,240	170,350	156,950	136,320	132,620	126,000
Mean	3,933	4,358	4,386	5,885	6,807	5,824	6,141	5,495	5,232	4,397	4,278	4,200
Ac-ft	241,800	259,300	269,700	361,900	378,000	358,100	365,400	337,900	311,300	270,400	263,000	249,900

Calendar year 1952: Max 12,300 Min 3,730 Mean 5,115 Ac-ft 3,713,000
Water year 1952-53: Max 9,430 Min 3,730 Mean 5,065 Ac-ft 3,667,000

* Discharge measurement made on this day.

Warm Springs River at Hehe Mill, near Warm Springs, Oreg.

Location.--lat 44°58'00", long. 121°28'20", in N½ sec. 18, T. 7 S., R. 11 E., on left bank at downstream side of highway bridge, a quarter of a mile east of abandoned Hehe Mill, 10 miles south of Bear Springs ranger station, and 18 miles northwest of Warm Springs.

Drainage area.--108 sq mi.

Records available.--June 1915, August 1949 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 746.26 ft above mean sea level (Oregon State Highway Department benchmark). During June 1915, staff gage at site half a mile downstream at different datum.

Extremes.--Maximum discharge during year, 616 cfs Jan. 19 (gage height, 2.81 ft), from rating curve extended above 350 cfs; minimum, 100 cfs Dec. 28.
1915, 1949-53: Maximum discharge, 662 cfs Feb. 11, 1951 (gage height, 2.80 ft), from rating curve extended above 350 cfs; maximum gage height, 4.56 ft Jan. 31, 1951 (ice jam); minimum discharge, 98 cfs Jan. 17, 1950.
A discharge of 97 cfs was measured on Sept. 5, 1915.

Remarks.--Records good. No regulation or diversion above station. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.9	101
1.3	174
2.0	368
2.6	549

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	119	107	104	102	287	193	172	206	*232	142	126	118
2	119	107	102	106	301	186	170	196	219	139	126	116
3	119	107	102	108	359	181	167	191	208	139	126	116
4	119	*107	106	106	391	179	165	196	203	137	128	116
5	118	107	104	102	406	176	163	206	203	137	128	116
6	118	107	107	102	460	172	163	219	216	137	130	116
7	118	107	113	107	466	170	163	221	224	137	128	116
8	118	107	108	123	466	170	161	224	216	137	126	114
9	116	107	106	216	418	*170	161	221	208	135	124	114
10	116	107	110	154	382	174	161	211	203	135	124	113
11	116	107	110	135	351	181	159	206	196	135	124	113
12	116	108	110	167	322	184	161	203	196	135	124	113
13	113	110	107	174	298	179	161	203	193	133	124	113
14	113	108	106	159	284	176	154	203	186	133	124	113
15	113	108	*104	139	269	176	152	208	179	133	123	113
16	113	107	104	148	272	181	150	203	174	131	123	113
17	112	106	102	*206	342	179	152	208	170	131	121	113
18	112	106	102	475	284	181	152	219	167	*131	121	113
19	112	106	101	543	252	181	152	246	165	128	121	113
20	112	106	102	487	238	181	154	255	163	128	121	113
21	110	106	102	418	227	179	159	249	159	128	121	113
22	110	104	104	356	219	186	161	235	154	128	121	113
23	110	104	104	339	206	186	174	235	150	130	121	113
24	110	104	101	301	201	186	188	238	148	130	*119	113
25	108	102	101	284	196	188	193	221	148	130	119	113
26	108	102	101	*255	196	186	196	258	146	128	126	113
27	108	101	101	227	203	186	221	290	144	128	121	113
28	108	101	101	216	201	186	*230	258	144	128	123	114
29	108	101	102	221	-	184	227	246	146	128	121	113
30	107	102	104	221	-	179	219	241	144	126	119	113
31	107	-	102	232	-	176	-	235	-	126	118	-
Total	3,506	3,169	3,233	6,929	8,497	5,592	5,161	6,951	5,404	4,103	3,821	3,416
Mean	113	106	104	224	303	180	172	224	180	132	123	114
Cfsm	1.05	0.981	0.963	2.07	2.81	1.67	1.59	2.07	1.67	1.22	1.14	1.06
In.	1.21	1.09	1.11	2.39	2.93	1.93	1.78	2.39	1.86	1.41	1.32	1.18
Ac-ft	6,950	6,290	6,410	13,740	16,850	11,090	10,240	13,790	10,720	8,140	7,580	6,780

Calendar year 1952: Max 333 Min 101 Mean 157 Cfsm 1.45 In. 19.83 Ac-ft 114,200
Water year 1952-53: Max 543 Min 101 Mean 164 Cfsm 1.52 In. 20.60 Ac-ft 118,600

* Discharge measurement made on this day.

Clear Creek near Government Camp, Oreg.

Location.--Lat 45°10'20", long. 121°41'00", in NW¼ sec. 4, T. 5 S., R. 9 E., on right bank 0.7 mile downstream from Clear Lake Outlet and 9 miles southeast of Government Camp.

Drainage area.--8.9 sq mi, approximately.

Records available.--October 1946 to September 1953 in reports of Geological Survey (discontinued). December 1940 to September 1941 in reports of Oregon State engineer, published as "at Oakgrove Road near Wapinitia."

Gage.--Water-stage recorder. Datum of gage is 3,450.94 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. December 1940 to September 1941 at different datum.

Average discharge.--7 years, 21.8 cfs.

Extremes.--Maximum discharge during year, 64 cfs May 27 (gage height, 2.42 ft); minimum, 4.0 cfs Oct. 22, 23.
1940-41, 1946-53: Maximum discharge, 150 cfs Dec. 15, 1946 (gage height, 3.0 ft); minimum observed, 1.6 cfs Nov. 1, 1940.

Remarks.--Records good. No diversion or regulation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.39	4.3	1.8	24
1.5	8.2	2.1	41
1.6	12	2.5	70

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.2	4.6	4.6	4.6	39	22	14	35	56	20	9.1	8.2
2	5.2	4.6	4.6	4.9	40	21	14	35	54	20	8.6	7.8
3	5.2	4.6	4.6	5.2	44	20	14	34	52	19	8.6	7.4
4	5.2	4.6	4.6	5.2	47	19	14	36	50	19	8.6	7.0
5	4.9	4.6	*5.2	5.2	49	19	14	37	49	18	8.6	7.4
6	4.9	4.6	5.2	4.9	52	18	14	40	51	18	9.1	7.4
7	4.9	4.3	6.0	5.2	56	18	14	43	52	17	9.1	7.4
8	4.9	4.3	6.3	6.3	56	18	14	48	49	17	9.1	7.0
9	4.9	4.3	6.3	11	54	17	*14	53	47	*17	8.6	7.0
10	4.9	4.6	7.0	10	53	17	14	51	44	16	8.6	7.0
11	4.9	4.6	7.0	11	51	17	14	49	42	16	8.6	6.6
12	4.9	4.9	7.4	*14	49	17	14	46	42	16	8.6	6.6
13	5.2	5.2	7.0	14	46	17	14	46	42	15	8.2	7.4
14	4.9	5.2	6.6	14	43	16	14	47	39	15	8.2	6.6
15	4.9	5.2	6.3	14	41	16	13	47	37	15	8.2	6.6
16	4.6	5.2	6.3	16	40	16	13	46	35	14	8.2	6.6
17	4.6	5.2	6.0	20	41	16	13	47	34	14	8.2	6.6
18	4.6	5.2	6.0	27	40	16	14	47	32	13	8.2	6.6
19	4.6	5.2	6.0	33	37	16	14	52	31	13	7.8	6.6
20	4.6	4.9	6.0	35	36	15	15	54	30	13	7.8	6.6
21	4.6	4.9	6.0	35	33	15	15	*55	28	12	7.8	6.6
22	*5.2	4.9	6.0	36	30	15	16	53	27	12	7.8	6.6
23	4.3	4.9	6.0	39	28	16	18	53	26	11	7.8	6.6
24	4.6	4.9	5.6	39	27	17	19	53	25	11	7.8	6.6
25	4.6	4.6	5.6	39	25	16	19	50	25	11	8.2	6.6
26	4.6	4.6	5.2	39	25	16	21	55	24	10	8.6	6.3
27	4.6	4.6	5.2	37	*24	16	26	63	22	10	8.2	6.3
28	4.6	4.6	4.9	36	23	16	30	61	22	10	*8.6	6.6
29	4.3	4.6	4.9	37	-	15	32	61	22	10	8.2	6.3
30	4.3	4.6	4.9	36	-	15	34	58	21	10	8.2	6.6
31	4.6	-	4.6	38	-	15	-	56	-	10	8.2	-
Total	148.3	143.1	177.9	671.5	1,129	523	508	1,511	1,110	442	259.4	205.5
Mean	4.78	4.77	5.74	21.7	40.3	16.9	16.9	48.7	37.0	14.3	8.37	6.85
Cfsm	0.537	0.536	0.645	2.44	4.53	1.90	1.90	5.47	4.16	1.61	0.940	0.770
In.	0.62	0.60	0.74	2.81	4.72	2.19	2.12	6.31	4.64	1.85	1.08	0.86
Ac-ft	294	284	353	1,330	2,240	1,040	1,010	3,000	2,200	877	515	408

Calendar year 1952: Max 75 Min 4.3 Mean 16.0 Cfsm 1.80 In. 24.48 Ac-ft 11,620
Water year 1952-53: Max 63 Min 4.3 Mean 18.7 Cfsm 2.10 In. 28.54 Ac-ft 13,550

Peak discharge (base, 80 cfs).--No peak above base.
* Discharge measurement made on this day.

White River below Tygh Valley, Oreg.

Location.--Lat 45°14'30", long. 121°05'30", in NW¼ sec. 8, T. 4 S., R. 14 E., on left bank about 900 ft below Pacific Power & Light Co.'s plant at White River Falls and 4½ miles east of Tygh Valley.

Drainage area.--393 sq mi.

Records available.--October 1917 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 840 ft (by barometer). Prior to July 28, 1931, water-stage recorder at site 50 ft downstream at datum 0.31 ft higher.

Average discharge.--36 years, 427 cfs.

Extremes.--Maximum discharge during year, 4,740 cfs Jan. 18 (gage height, 7.45 ft); minimum, 32 cfs Oct. 25 (gage height, -0.15 ft); minimum daily, 100 cfs Nov. 27-30.
1917-53: Maximum discharge, 13,300 cfs Jan. 6, 1923 (gage height, about 13.3 ft), from rating curve extended above 5,000 cfs; minimum, 10 cfs Dec. 11-14, 1919, Aug. 9, 1931; minimum daily, 71 cfs Aug. 31, 1941.

Remarks.--Records good except those for periods of doubtful or no gage-height record, which are fair. Diversions above station for irrigation. Some regulation of low flow by powerplant.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.9	99	4.0	1,370
1.4	167	6.0	3,100
2.0	330	7.0	4,200
3.0	745		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	125	121	110	180	1,920	507	439	850	972	376	d170	154
2	125	110	120	280	1,680	483	428	755	916	376	d170	154
3	125	110	130	440	2,150	467	424	695	839	365	d170	151
4	124	110	151	340	2,080	443	421	735	785	351	167	146
5	125	110	151	290	1,980	424	421	839	755	344	173	146
6	125	120	146	230	2,470	418	421	1,010	861	340	171	141
7	128	120	158	300	2,380	418	407	1,030	949	337	173	144
8	129	110	156	700	2,110	421	*396	949	828	*334	169	138
9	132	110	149	2,000	1,720	435	396	878	755	330	165	133
10	132	120	160	700	1,480	467	382	785	735	317	160	132
11	130	130	171	*900	1,280	479	365	705	735	300	156	132
12	129	140	234	1,400	1,120	475	372	675	785	291	154	133
13	130	150	246	1,190	996	455	358	685	795	273	151	133
14	125	140	197	861	927	439	337	715	735	270	147	129
15	121	130	175	632	834	439	323	695	715	258	147	129
16	120	120	167	755	795	439	323	705	705	243	147	126
17	121	120	160	1,870	1,120	435	330	755	685	234	144	128
18	123	120	158	3,910	916	424	337	806	655	229	144	124
19	123	120	154	4,050	785	421	372	1,020	618	227	146	125
20	124	120	154	3,170	715	414	421	*984	582	216	149	125
21	129	120	151	2,280	665	414	564	894	547	209	146	124
22	*130	120	167	1,780	636	424	645	775	515	201	143	125
23	123	110	162	2,220	586	491	745	745	491	194	136	130
24	117	110	153	1,800	564	515	765	735	467	d190	146	130
25	111	110	140	1,560	547	523	806	665	459	d190	151	126
26	117	110	140	1,490	*543	495	883	861	435	d190	156	126
27	118	100	140	1,180	531	483	1,190	1,400	421	d190	*165	129
28	116	100	140	1,050	523	483	1,280	1,190	418	d180	167	135
29	116	100	170	1,150	-	475	1,160	1,210	414	d180	183	133
30	117	100	210	1,130	-	467	996	1,140	396	d180	165	125
31	120	-	190	1,400	-	471	-	1,020	-	d170	156	-
Total	3,830	3,511	5,010	41,238	34,053	14,144	16,707	26,906	19,968	8,085	4,887	4,006
Mean	124	117	162	1,330	1,216	456	557	868	666	261	158	133
Ac-ft	7,600	6,960	9,940	81,790	67,540	28,050	33,140	53,370	39,610	16,040	9,690	7,950

Calendar year 1952: Max 2,260 Min 100 Mean 388 Ac-ft 282,000
Water year 1952-53: Max 4,050 Min 100 Mean 500 Ac-ft 361,700

Peak discharge (base, 1,200 cfs).--Jan. 9 (time unknown) 3,430 cfs (6.3 ft); Jan. 12 (4 a.m.) 1,560 cfs (4.25 ft); Jan. 18 (8 p.m.) 4,740 cfs (7.45 ft); Jan. 23 (6 a.m.) 2,380 cfs (5.25 ft); Feb. 6 (6 a.m.) 2,650 cfs (5.55 ft); Feb. 17 (10 a.m.) 1,260 cfs (3.85 ft); Apr. 28 (5 a.m.) 1,320 cfs (3.94 ft); May 27 (5:30 a.m.) 1,580 cfs (4.28 ft).
* Discharge measurement made on this day.
d Doubtful gage-height record; discharge computed from generation figures for powerplant 900 ft upstream.
Note.--No gage-height record Nov. 2 to Dec. 3 and Dec. 25 to Jan. 10; discharge estimated on basis of recorded range in stage and records for Hood River at Hood River.

Deschutes River at Moody, near Biggs, Oreg.

Location.--Lat 45°37'20", long. 120°54'05", in SE¼ sec. 26, T. 2 N., R. 15 E., on right bank at Moody, 1½ miles upstream from mouth and 5 miles southwest of Biggs.

Drainage area.--10,500 sq mi, approximately.

Records available.--October 1897 to December 1899, July 1906 to September 1953. Published as "near Moro" 1897-99.

Gage.--Water-stage recorder. Datum of gage is 167.43 ft above mean sea level, datum of 1929. October 1897 to December 1899 staff gage at site 10 miles upstream at different datum. July 1906 to July 1930 staff gage at site 300 ft downstream at datum 0.5 ft lower.

Average discharge.--48 years (1898-99, 1906-53), 5,785 cfs.

Extremes.--Maximum discharge during year, 19,700 cfs Jan. 19 (gage height, 6.22 ft); minimum, 4,270 cfs Oct. 11 (gage height, 2.42 ft).
1897-99, 1906-53: Maximum discharge, 43,600 cfs Jan. 7, 1923 (gage height, 10.2 ft, site and datum then in use), from rating curve extended above 15,000 cfs; minimum, 3,380 cfs Sept. 16-19, 1931 (gage height, 2.06 ft).

Remarks.--Records excellent. Many diversions in upper river basin for irrigation. Some winter and spring runoff stored in Crescent Lake and in Crane Prairie, Wickiup, and Ochoco Reservoirs. Records of chemical analyses and water temperatures for the water year 1953 are given in WSP 1293.

Cooperation.--Water-stage recorder inspected by agent of Eastern Oregon Land Co.

Revisions.--WSP 754: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

2.4	4,210
3.0	6,030
4.0	9,530
6.0	18,600

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,520	4,550	4,810	4,610	9,090	7,030	8,000	9,800	7,760	5,600	4,750	5,480
2	4,520	4,690	4,900	4,690	9,460	6,890	7,900	8,720	7,620	5,570	4,810	5,480
3	4,460	4,870	4,690	5,080	10,200	6,790	7,440	7,960	7,580	5,510	4,840	5,350
4	4,430	4,640	*4,490	5,080	12,100	6,860	7,480	7,540	7,300	5,540	4,960	5,170
5	4,410	4,610	4,520	5,230	12,900	6,760	7,650	7,370	7,100	5,570	4,990	4,990
6	4,410	4,640	4,460	5,110	14,800	6,720	8,000	7,370	7,100	5,600	5,080	4,960
7	4,380	4,840	4,780	5,140	14,000	6,690	*8,140	7,510	7,340	*5,640	5,170	4,960
8	4,320	4,900	5,140	5,540	14,200	6,720	8,110	7,540	7,540	5,600	5,170	4,960
9	4,290	4,900	4,960	13,300	13,400	6,660	7,510	7,510	7,790	5,640	5,110	4,900
10	4,290	4,930	5,020	10,500	12,500	6,930	7,200	7,270	7,650	5,480	5,020	4,840
11	4,270	4,960	5,140	*7,720	10,700	7,270	6,960	6,960	7,540	5,380	4,960	4,810
12	4,290	4,990	5,170	8,430	9,830	7,400	6,760	6,760	7,620	5,350	4,960	4,690
13	4,320	4,990	5,290	9,090	9,310	7,230	6,520	6,620	7,790	5,410	4,960	4,660
14	4,320	5,020	5,110	8,540	8,900	7,060	6,360	6,560	8,140	5,670	4,900	4,750
15	4,320	5,020	4,990	7,760	8,540	6,930	6,200	6,560	8,320	6,030	4,840	4,750
16	4,380	4,990	4,960	7,340	8,290	6,790	6,000	6,720	8,000	5,770	4,810	4,720
17	4,430	4,960	4,960	8,180	8,860	6,930	5,930	6,860	7,510	5,410	4,810	4,660
18	4,460	4,900	4,960	11,200	9,720	6,860	6,000	6,890	7,170	5,540	4,750	4,660
19	4,460	4,900	4,960	18,300	8,750	6,830	6,430	*7,060	6,890	5,510	4,750	4,660
20	4,460	4,900	4,990	17,900	8,180	6,890	6,590	7,480	6,590	5,480	4,750	4,660
21	*4,720	4,900	4,990	16,600	7,960	6,930	7,000	7,680	6,330	5,050	4,780	4,580
22	4,690	4,870	4,990	13,400	7,860	6,860	7,480	7,650	6,200	4,840	4,780	4,610
23	4,660	4,780	4,990	12,500	7,760	6,890	8,140	7,400	6,060	4,840	4,810	4,640
24	4,610	4,750	4,930	11,100	7,540	7,030	8,360	7,480	5,830	4,810	4,930	4,780
25	4,580	4,720	4,870	9,760	*7,400	7,650	8,470	7,370	5,670	4,750	4,930	4,720
26	4,550	4,780	4,870	9,420	7,370	8,180	8,290	7,790	5,640	4,720	*5,020	4,720
27	4,550	4,810	4,900	8,750	7,370	8,360	8,320	9,010	5,570	4,750	5,350	4,780
28	4,550	4,750	4,900	8,250	7,130	8,000	8,940	9,010	5,640	4,750	5,440	4,810
29	4,580	4,750	4,990	8,470	-	7,960	10,200	8,750	5,700	4,780	5,440	4,870
30	4,610	4,750	5,080	8,320	-	8,140	11,100	8,320	5,700	4,750	5,540	4,840
31	4,610	-	4,840	8,720	-	8,000	-	7,960	-	4,750	5,510	-
Total	138,450	145,060	152,650	284,030	274,120	222,240	227,480	235,480	208,690	164,090	154,920	145,460
Mean	4,466	4,835	4,924	9,162	9,790	7,169	7,583	7,596	6,956	5,293	4,997	4,849
Ac-ft	274,600	287,700	302,800	563,400	543,700	440,800	451,200	467,100	413,900	325,500	307,300	288,500

Calendar year 1952: Max 14,500 Min 4,270 Mean 6,203 Ac-ft 4,503,000
Water year 1952-53: Max 18,300 Min 4,270 Mean 6,446 Ac-ft 4,666,000

* Discharge measurement made on this day.

Columbia River near The Dalles, Oreg.

Location.--Lat 45°39'00", long. 120°58'00", in NE¼ sec. 20, T. 2 N., R. 15 E., on left bank 300 ft upstream from staff gage in entrance to Celilo Canal, just upstream from Celilo Falls, 3 miles downstream from Deschutes River, 11 miles east of The Dalles, and at mile 201.

Drainage area.--237,000 sq mi, approximately.

Records available.--June 1878 to September 1953. Prior to October 1936, published as "at The Dalles." Maximum stage for each year in period 1858 to 1877 from reading of gage at Lower Cascades Landing.

Gage.--Water-stage recorder. Datum of gage is 0.12 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1931, records based on staff gage at The Dalles, supplemented for a few periods by gage-height records at Umatilla and Cascade locks; datum of gage at The Dalles was 46.86 ft higher than present datum. Oct. 1, 1931, to May 1, 1935, staff gage in entrance to Celilo Canal 300 ft downstream from present site at datum 37.59 ft higher.

Average discharge.--75 years, 194,700 cfs.

Extremes.--Maximum discharge during year, 612,000 cfs June 17 (gage height, 144.74 ft); minimum, 69,400 cfs Jan. 7 (gage height, 128.66 ft).
1858-1953: Maximum discharge, 1,240,000 cfs June 6, 1894 (gage height, 106.5 ft on gage at The Dalles, 160.1 ft at present site); minimum observed, 35,000 cfs Jan. 12, 1937 (gage height, 126.0 ft).

Remarks.--Records excellent. Some regulation by Franklin D. Roosevelt Lake above Grand Coulee Dam and by reservoirs in Kootenai, Flathead, Pend Oreille, Spokane, Chelan, Yakima, and Snake River basins.

Cooperation.--Recorder inspected and gages read by Corps of Engineers.

Revisions (water years).--WSP 534: 1920(m). WSP 1094: 1894. WSP 1248: 1876(M), 1886, 1888, 1899, 1909.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

128.5	66,200	138	357,000
130	99,000	140	431,000
132	151,000	142	507,000
134	213,000	144	583,000
136	283,000	145	622,000

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	83,000	88,300	79,900	80,800	124,000	121,000	155,000	248,000	412,000	368,000	220,000	138,000
2	84,300	87,900	78,600	83,200	131,000	127,000	156,000	235,000	421,000	383,000	203,000	139,000
3	86,100	87,200	78,000	82,600	139,000	126,000	156,000	210,000	424,000	379,000	198,000	139,000
4	87,900	82,600	84,800	81,000	152,000	118,000	154,000	198,000	440,000	376,000	197,000	133,000
5	87,200	79,500	85,900	75,700	170,000	126,000	151,000	177,000	469,000	371,000	186,000	132,000
6	87,400	83,900	86,100	73,400	186,000	130,000	147,000	165,000	486,000	373,000	175,000	132,000
7	86,100	86,700	83,900	*70,600	181,000	125,000	147,000	176,000	496,000	379,000	184,000	129,000
8	82,100	86,300	85,200	79,300	175,000	120,000	145,000	207,000	504,000	367,000	179,000	123,000
9	83,700	84,800	81,500	99,700	170,000	125,000	148,000	242,000	520,000	367,000	170,000	116,000
10	90,200	89,200	79,900	88,600	155,000	119,000	150,000	233,000	537,000	366,000	164,000	117,000
11	88,600	82,300	79,500	87,400	145,000	117,000	145,000	227,000	542,000	361,000	159,000	124,000
12	88,600	80,400	81,500	91,100	149,000	125,000	141,000	200,000	542,000	347,000	159,000	121,000
13	86,300	82,600	81,000	90,200	144,000	133,000	137,000	177,000	560,000	336,000	162,000	120,000
14	84,300	84,300	81,700	89,500	138,000	140,000	133,000	180,000	587,000	330,000	152,000	119,000
15	81,700	85,600	80,400	92,200	135,000	142,000	133,000	179,000	607,000	328,000	129,000	114,000
16	82,300	89,700	77,600	103,000	133,000	137,000	132,000	182,000	608,000	332,000	139,000	105,000
17	86,700	89,200	77,600	108,000	128,000	136,000	131,000	197,000	609,000	328,000	140,000	114,000
18	88,800	85,900	79,700	119,000	127,000	131,000	134,000	207,000	604,000	325,000	139,000	113,000
19	90,400	81,900	81,900	137,000	132,000	135,000	142,000	207,000	601,000	323,000	134,000	116,000
20	89,000	81,900	80,100	158,000	132,000	137,000	140,000	221,000	601,000	319,000	129,000	116,000
21	87,400	83,200	84,100	164,000	126,000	137,000	143,000	273,000	588,000	309,000	131,000	109,000
22	79,900	83,900	85,200	171,000	127,000	142,000	148,000	287,000	567,000	299,000	131,000	109,000
23	82,300	88,100	82,300	169,000	125,000	145,000	161,000	305,000	538,000	298,000	135,000	110,000
24	86,500	85,200	80,800	157,000	117,000	144,000	172,000	319,000	512,000	289,000	137,000	113,000
25	86,500	79,700	81,900	151,000	112,000	148,000	123,000	346,000	492,000	266,000	139,000	115,000
26	88,800	76,500	83,400	147,000	118,000	164,000	155,000	361,000	477,000	255,000	136,000	114,000
27	89,200	82,600	81,500	139,000	122,000	166,000	201,000	364,000	436,000	245,000	137,000	113,000
28	86,300	92,700	76,500	126,000	121,000	166,000	207,000	361,000	383,000	234,000	142,000	112,000
29	81,700	88,600	71,700	123,000	-	164,000	222,000	367,000	376,000	231,000	139,000	107,000
30	83,200	84,800	75,200	121,000	-	160,000	264,000	372,000	358,000	223,000	136,000	101,000
31	87,400	-	76,500	121,000	-	159,000	-	387,000	-	215,000	138,000	-
Total	‡2,665.9	‡2,545.5	‡2,503.9	‡3,479.3	‡3,914	‡4,265	‡4,673	‡7,810	‡15,297	‡9,922	‡4,819	‡3,563
Mean	86,000	84,850	80,770	112,200	139,800	137,600	155,800	251,900	509,900	320,100	155,500	118,800
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	‡5,288	‡5,049	‡4,966	‡6,901	‡7,763	‡8,460	‡9,269	‡15,490	‡30,340	‡19,680	‡9,558	‡7,067

Calendar year 1952: Max 557,000 Min 71,700 Mean 190,000 Cfsm 0.802 In. 10.91 Ac-ft 137,900,000
Water year 1952-53: Max 609,000 Min 70,600 Mean 179,300 Cfsm 0.757 In. 10.28 Ac-ft 129,800,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Fifteenmile Creek near Wrentham, Oreg.

Location.--Lat 45°30'40", long. 121°02'20", in sec. 3, T. 1 S., R. 14 E., on left bank 0.1 mile below Dry Creek, 3 miles southwest of Wrentham, and 9½ miles southeast of The Dalles.

Drainage area.--171 sq mi.

Records available.--October 1946 to September 1953 in reports of Geological Survey (discontinued). December 1926 to May 1927 in reports of State engineer.

Gage.--Water-stage recorder. Altitude of gage is 980 ft, revised (by barometer). December 1926 to May 1927, staff gage at site 2½ miles downstream at different datum.

Average discharge.--7 years (1946-53), 62.3 cfs.

Extremes.--Maximum discharge during year, 3,540 cfs Jan. 9 (gage height, 8.08 ft), from rating curve extended above 600 cfs on basis of slope-area determination of peak flow; minimum, 1.3 cfs Nov. 23.

1946-53: Maximum discharge, that of Jan. 9, 1953; maximum gage height, 8.42 ft Feb. 10, 1949 (ice jam); minimum discharge, 0.8 cfs Aug. 22, 1947.

Revisions.--The maximum discharge for the water year 1948 has been revised to 1,760 cfs Jan. 6, 1948 (gage height, 6.32 ft), superseding figure published in WSP 1124.

Remarks.--Records good except those for periods of ice effect or shifting control, which are fair. The town of Dufur diverts water from creek about 5 miles above station. Several small diversions above station for irrigation of about 2,400 acres (corrected).

Revisions.--Revised figures of discharge, in cubic feet per second, for high-water periods in the water year 1948, superseding figures published in WSP 1124, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1948		1948-Con.		1948-Con.	
Jan. 6	437	Feb. 15	533	Feb. 24	283
7	1,140	16	307	25	241
8	515	17	215	26	250
9	316	21	235	27	218
10	244	22	582	28	195
Feb. 14	175	23	384		

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
January 1948	4,636	1,140	21	150	9,200
February	4,770	582	31	164	9,460
Water year 1947-48	22,392.7	1,140	1.6	61.2	44,430
Calendar year 1948	22,995.5	1,140	1.6	62.8	45,620

Revised peak discharge.--1947-48: Jan. 6 (12 p.m.) 1,760 cfs; Feb. 15 (7 a.m.) 1,460 cfs; Feb. 22 (5 a.m.) 700 cfs.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.2	5.8	b6	10	222	80	37	77	90	42	8.8	10
2	2.8	5.5	b7	16	234	77	36	72	87	41	8.4	9.8
3	2.5	6.0	*8.8	36	255	71	35	69	82	40	7.9	9.8
4	2.6	6.5	8.8	26	243	68	34	66	79	38	7.9	9.3
5	2.8	6.5	7.4	23	246	64	35	64	74	41	8.4	9.3
6	2.8	6.5	6.5	20	240	60	34	64	71	43	8.8	8.8
7	2.5	6.5	11	22	220	57	33	68	74	44	8.4	8.4
8	2.5	6.9	6.5	185	202	54	*33	69	74	*44	7.9	7.4
9	3.0	7.4	5.5	*1,160	175	54	33	66	72	41	7.4	5.2
10	3.2	6.9	6.9	*249	160	52	33	63	69	38	7.4	4.2
11	4.0	6.0	8.4	236	146	54	32	63	66	37	6.9	3.2
12	5.2	6.9	9.8	302	135	54	32	61	68	36	7.4	2.5
13	5.1	6.9	11	246	126	52	31	58	72	36	6.9	2.5
14	3.2	7.4	8.4	198	118	50	29	57	74	35	5.5	2.3
15	3.3	6.9	6.5	*152	108	48	28	55	71	34	4.5	2.3
16	3.5	6.5	6.0	169	104	48	28	54	69	32	4.0	3.5
17	4.0	5.8	5.8	266	158	47	28	55	66	29	3.3	4.0
18	4.2	5.8	5.5	444	137	45	27	58	64	26	3.2	4.0
19	4.5	6.0	5.5	778	124	48	26	64	64	24	5.0	3.2
20	4.8	6.0	5.8	811	124	47	28	*71	64	23	6.9	3.3
21	*4.8	5.5	5.5	*504	118	45	29	72	64	20	8.4	4.0
22	4.8	b3.5	5.8	380	114	45	30	69	61	20	8.8	4.5
23	4.8	b2.5	5.8	357	103	44	34	68	57	18	8.8	4.8
24	5.0	b2.5	5.5	306	99	43	40	69	52	16	9.8	4.0
25	4.8	b3	3.5	298	*94	47	41	68	50	15	9.8	4.8
26	4.5	b3.5	3.8	294	92	45	44	69	48	14	9.8	4.8
27	5.0	b4	4.2	240	88	43	61	103	45	14	*11	5.0
28	5.2	b4.5	3.8	228	85	42	79	106	44	12	11	6.5
29	5.5	b5	5.0	228	-	40	79	101	45	12	12	7.4
30	6.0	b5.5	7.9	210	-	38	79	97	44	11	11	8.4
31	6.0	-	11	198	-	38	-	94	-	9.3	11	-
Total	126.1	168.2	208.9	8,592	4,270	1,600	1,148	2,190	1,960	885.3	246.3	167.2
Mean	4.07	5.61	6.74	277	152	51.6	38.3	70.6	65.3	28.6	7.95	5.57
Ac-ft	250	334	414	17,040	8,470	3,170	2,280	4,340	3,890	1,760	489	332

Calendar year 1952: Max 900 Min 1.4 Mean 45.5 Ac-ft 33,010
Water year 1952-53: Max 1,160 Min 2.3 Mean 59.1 Ac-ft 42,770

Peak discharge (base, 270 cfs).--Jan. 9 (1:30 a.m.) 3,540 cfs (8.08 ft); Jan. 11 (9:30 p.m.) 447 cfs (4.44 ft); Jan. 20 (7 a.m.) 1,190 cfs (5.58 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Shifting-control method used Oct. 13 to Jan. 8.

Eightmile Creek near Boyd, Oreg.

Location.--Lat 45°31'10", long. 121°06'40", in SE¼ sec. 31, T. 1 N., R. 14 E., on left bank at upstream side of highway bridge, 2½ miles northwest of Boyd and 7 miles southeast of The Dalles.

Drainage area.--56 sq mi, approximately.

Records available.--October 1946 to September 1953 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 802.32 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--7 years, 23.7 cfs.

Extremes.--Maximum discharge during year, 195 cfs Jan. 9 (gage height, 4.78 ft); minimum, 2.2 cfs Oct. 2.

1946-53: Maximum discharge, 385 cfs Feb. 10, 1949 (gage height, 7.11 ft); minimum, 0.8 cfs Sept. 24, 1947.

Revisions.--Figures of maximum discharge for the water years 1947 and 1948 have been revised to 334 cfs June 7, 1947 (gage height, 6.55 ft) and 227 cfs Jan. 7, 1948 (gage height, 5.35 ft), superseding figures published in WSP 1094 and 1124, respectively.

Remarks.--Records good except those for periods of ice effect or doubtful gage-height record, which are fair. No regulation. Several small diversions above gage for irrigation of about 1,300 acres.

Revisions.--Revised figures of discharge, in cubic feet per second, for periods in the water years 1947-48, superseding figures published in WSP 1094 and 1124, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1946		1947-Con.		1947-Con.		1948-Con.	
Dec. 12	14	Jan. 24	20	Feb. 22	66	Jan. 24	28
13	18	25	40	23	62	25	25
14	29	26	70	24	58	31	23
15	77	27	50	25	55	Feb. 4	22
16	70	28	40	26	50	8	23
17	46	31	27			9	27
18	36	Feb. 1	29	1948		13	36
19	34	2	65	Jan. 6	64	14	49
20	30	3	84	7	213	15	64
21	26	4	71	8	180	16	37
22	24	5	62	9	137	17	52
26	17	6	55	10	119	18	55
27	16	7	49	11	95	19	48
28	12	8	43	12	79	21	48
29	11	9	38	13	66	22	156
30	10	12	38	14	57	23	149
31	10	13	51	15	52	24	129
		14	59	16	43	25	117
1947		15	72	17	36	26	130
Jan. 1	9	16	122	18	34	27	118
19	7	17	132	19	32	28	107
20	8	18	115	20	30	29	93
21	10	19	99	21	28		
22	12	20	82	22	26		
23	14	21	73	23	28		

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
December 1946	629.1	77	7.1	20.3	1,250
January 1947	491.9	70	5	15.9	976
February	1,782	137	29	63.6	3,530
Water year 1946-47	5,868.4	132	1.0	16.1	11,650
Calendar year 1947	5,411.9	132	1.0	14.8	10,740
January 1948	1,568.2	213	7.2	50.6	3,110
February	1,669	156	14	57.6	3,310
Water year 1947-48	9,168.0	213	1.6	25.0	18,170
Calendar year 1948	9,593.8	213	3.0	26.2	19,020

Revised peak discharge.--1946-47: Feb. 16 (10:30 p.m.) 141 cfs; June 7 (7:30 p.m.) 334 cfs.

1947-48: Jan. 7 (11:30 a.m.) 227 cfs; Feb. 14 (6:30 p.m.) 135 cfs; Feb. 22 (9:30 a.m.) 187 cfs.

Eightmile Creek near Boyd, Oreg.--Continued

Rating table, water year 1952-53, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.5	2.6	2.6	36
1.9	6.7	3.0	66
2.1	10	4.0	140
2.3	18	4.5	177

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.0	5.5	b4.2	6.1	76	29	17	24	37	18	5.5	4.7
2	2.8	5.6	b4.4	6.5	77	27	16	22	35	17	5	4.6
3	3.0	5.9	*b4.6	6.2	81	26	16	21	32	17	5	4.6
4	3.0	6.0	b5.0	7.1	79	25	16	20	30	16	5	4.5
5	3.0	6.0	b6.0	7.5	78	24	16	20	29	15	4.8	4.7
6	3.2	6.1	7.4	7.4	79	23	15	20	29	15	4.8	4.4
7	3.4	6.1	8.7	8.3	76	22	14	20	32	15	4.6	4.0
8	3.5	6.1	8.1	22	68	22	*14	21	32	*14	4.6	3.6
9	3.5	6.1	7.5	101	60	22	14	22	29	14	4.6	3.8
10	3.0	6.2	8.0	*40	56	22	14	22	29	13	4.4	3.8
11	3.4	6.3	8.1	29	51	22	14	22	28	13	4.4	3.5
12	3.7	6.5	7.4	33	46	22	14	20	28	12	4.4	3.8
13	3.4	6.8	7.1	30	44	22	13	20	30	11	4.2	3.6
14	3.4	6.8	6.6	32	42	20	13	20	29	11	4.0	3.7
15	3.8	6.7	6.2	27	39	20	13	18	28	10	3.8	3.6
16	3.7	6.5	6.1	24	36	20	13	18	27	9.5	3.6	3.5
17	3.8	6.2	6.0	37	56	20	12	18	26	9.5	3.6	3.6
18	4.0	6.5	5.6	60	46	18	12	19	25	9	3.4	3.1
19	4.0	6.5	5.5	126	43	19	12	22	25	9	3.4	3.5
20	4.0	6.5	6.0	*155	42	18	12	*25	25	8.5	3.2	3.4
21	*4.1	6.5	6.0	127	42	18	12	26	25	8.5	3.2	3.4
22	3.9	b5.0	6.2	100	41	18	13	26	23	8	3.2	3.5
23	4.0	b4.0	6.0	96	37	18	14	25	22	7.5	3.5	3.5
24	4.1	b4.0	5.7	84	34	18	15	26	21	7.5	3.7	3.5
25	4.4	b4.0	5.5	85	32	18	15	26	20	7	4.4	3.5
26	4.9	b4.0	5.3	79	*30	18	16	27	20	7	5	3.5
27	5.0	b4.0	6.1	65	30	18	22	42	18	6	*5.6	3.5
28	5.1	b4.0	6.1	64	30	18	24	40	16	6.5	5.9	3.9
29	5.4	b4.0	7.1	64	-	18	24	38	19	6	6.2	4.0
30	5.4	b4.0	7.1	60	-	18	25	39	18	6	6.0	4.4
31	5.5	-	6.3	61	-	18	-	38	-	5.5	5.1	-
Total	120.4	168.4	195.9	1,650.1	1,451	641	460	767	789	332.0	138.1	114.7
Mean	3.88	5.61	6.32	53.2	51.8	20.7	15.3	24.7	26.3	10.7	4.45	3.82
Ac-ft	239	334	389	3,270	2,880	1,270	912	1,520	1,560	659	274	228

Calendar year 1952: Max 120 Min 2.4 Mean 16.3 Ac-ft 11,820
Water year 1952-53: Max 155 Min 2.8 Mean 18.7 Ac-ft 13,540

Peak discharge (base, 60 cfs).--Jan. 9 (2:30 a.m.) 195 cfs (4.78 ft); Jan. 20 (3:30 p.m.) 172 cfs (4.44 ft); Jan. 25 (7:30 p.m.) 119 cfs (3.70 ft); Feb. 2 (3 p.m.) 84 cfs (3.23 ft); Feb. 17 (6:30 a.m.) 84 cfs (3.22 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Note.--Doubtful gage-height record July 10 to Aug. 22, Aug. 25, 26; discharge computed on basis of appearance of recorder graph and records for Fifteenmile Creek near Wrentham and Fivemile Creek near The Dalles.

Fivemile Creek near The Dalles, Oreg.

Location.--Lat 45°32'30", long. 121°08'30", in W½ sec. 25, T. 1 N., R. 13 E., on left bank 4½ miles southeast of The Dalles.

Drainage area.--32.4 sq mi.

Records available.--October 1948 to September 1953 in reports of Geological Survey (discontinued). December 1925 to May 1926, December 1927 to May 1928, and February 1930 to May 1931 in reports of State engineer.

Gage.--Water-stage recorder. Altitude of gage is 740 ft (by barometer). Prior to May 1926, staff gage at approximately present site at different datum. December 1927 to May 1931, at site half a mile upstream at different datum.

Average discharge.--5 years (1948-53), 16.5 cfs.

Extremes.--Maximum discharge during year, 91 cfs Jan. 20 (gage height, 2.34 ft); no flow Aug. 3, 12-16, 19.
1925-26, 1927-28, 1930-31, 1948-53: Maximum discharge recorded, 315 cfs Feb. 10, 1949 (gage height, 3.66 ft), from rating curve extended above 130 cfs by logarithmic plotting; no flow at times.

Remarks.--Records good except those below 3 cfs, which are fair. No regulation; diversions for irrigation of about 50 acres above station.

Rating tables, water year 1952-53, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Jan. 8-10)

Oct. 1 to Jan. 8		Jan. 9 to Sept. 30			
0.6	0.2	0.5	0	1.1	7.1
.7	.6	.6	.4	1.4	18
.8	1.6	.7	.9	1.7	34
.9	2.9	.8	1.8	2.0	57
1.0	4.8	.9	3.1	2.3	86

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.4	0.7	b0.9	1.7	44	18	13	17	12	1.8	0.1	0.5
2	.4	.7	b.9	2.2	49	18	13	15	11	1.6	.1	.5
3	.4	.9	*b.9	2.0	52	17	12	13	10	1.4	0	.5
4	.4	.9	.9	1.9	56	16	12	12	9.6	1.3	.4	.4
5	.4	.9	.9	2.0	59	15	11	12	8.9	1.0	.4	.4
6	.4	.9	1.0	2.0	58	15	11	12	9.2	.9	.5	.4
7	.3	1.0	1.4	2.2	53	14	*11	12	9.2	*.8	.5	.3
8	.3	1.0	1.1	4.3	47	14	10	12	8.3	.8	.2	.5
9	.4	1.0	1.1	24	41	13	10	12	7.7	.7	.2	.4
10	.5	1.0	1.3	*17	36	14	9.6	12	6.9	.6	.2	.4
11	.5	1.1	1.2	15	32	14	9.2	11	6.5	.5	.1	.4
12	.5	1.2	1.2	18	28	15	8.6	10	6.7	.5	0	.3
13	.5	1.0	.1	18	26	14	8.6	9.2	6.5	.4	0	.3
14	.5	1.0	1.0	16	24	14	8.0	8.9	5.7	.4	0	.4
15	.5	.9	1.0	13	22	13	7.7	8.6	5.0	.5	0	.4
16	.5	.9	1.0	12	22	13	7.4	8.3	4.6	.5	0	.3
17	.5	.9	1.0	17	34	13	7.4	8.0	4.3	.1	.1	.5
18	.5	1.0	1.0	29	34	13	7.1	8.6	4.1	.4	.2	.3
19	.6	1.0	1.0	65	32	13	6.9	*8.9	4.1	.5	0	.4
20	.6	1.0	1.2	*78	31	13	6.9	8.3	3.9	.5	.1	.4
21	*.6	1.0	1.1	65	29	13	7.7	8.3	3.7	.5	.3	.4
22	.6	b.9	1.2	51	28	13	8.9	8.0	3.3	.5	.2	.5
23	.6	b.8	1.1	49	25	13	10	8.0	2.9	.4	.3	.6
24	.6	b.8	1.1	43	23	13	11	8.3	2.8	.3	.5	.6
25	.6	b.9	1.0	41	*22	13	11	7.4	2.8	.3	.6	.5
26	.6	b.9	1.0	45	20	14	12	10	2.6	.3	*.6	.6
27	.6	b.9	1.1	38	19	14	15	15	2.4	.2	.3	.6
28	.6	b.9	1.1	35	19	15	17	14	2.4	.2	.4	.6
29	.6	b.9	1.3	34	-	15	18	13	2.2	.2	.4	.7
30	.6	b.9	1.4	33	-	14	18	13	2.0	.2	.4	.6
31	.6	-	1.4	35	-	14	-	12	-	.2	.3	-
Total	15.7	27.9	33.9	809.3	965	440	319.0	335.8	171.3	18.5	7.4	13.7
Mean	0.51	0.93	1.09	26.1	34.5	14.2	10.6	10.8	5.71	0.60	0.24	0.46
Ac-ft	31	55	67	1,610	1,910	873	633	666	340	37	15	27

Calendar year 1952: Max 79 Min 0 Mean 8.93 Ac-ft 6,480
Water year 1952-53: Max 78 Min 0 Mean 8.65 Ac-ft 6,260

Peak discharge (base, 130 cfs).--No peak above base.
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Klickitat River above West Fork, near Glenwood, Wash.

Location.--Lat 46°15'40", long. 121°14'30", in S½ sec. 18, T. 9 N., R. 13 E., on right bank half a mile upstream from Swamp Creek, 1½ miles upstream from West Fork, and 17 miles north of Glenwood.

Drainage area.--151 sq mi.

Records available.--November 1944 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 2,720 ft (from topographic map).

Average discharge.--8 years (1945-53), 363 cfs.

Extremes.--Maximum discharge during year, 1,620 cfs May 18 (gage height, 3.18 ft); minimum, 56 cfs Nov. 22 (gage height, 0.98 ft), but may have been less during period of ice effect.
1944-53: Maximum discharge, 3,280 cfs May 27, 1948 (gage height, 4.28 ft); minimum recorded, 48 cfs Nov. 14, 15, 1945; minimum gage height, 0.98 ft Nov. 14, 15, 1945, Nov. 22, 1952.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No diversion or regulation.

Rating table, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.0	59	2.1	465
1.2	102	2.4	680
1.5	193	2.7	960
1.8	311	3.2	1,590

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	86	b80	86	672	169	197	714	870	*442	204	124
2	84	84	a85	88	550	162	197	640	860	459	197	124
3	*86	86	b90	113	503	162	200	648	850	491	*197	121
4	84	84	*b90	105	471	159	200	784	850	503	193	116
5	84	86	b90	100	419	156	204	1,040	832	503	190	116
6	84	86	b90	*b88	382	156	208	1,320	832	503	197	113
7	84	84	b87	95	414	156	208	1,330	850	510	193	110
8	84	81	b84	105	393	169	212	1,150	832	564	183	110
9	84	77	81	286	348	186	204	971	765	516	176	*107
10	84	85	81	294	325	208	193	860	740	459	169	105
11	84	86	77	322	307	212	193	812	774	431	162	102
12	84	90	86	579	286	212	190	850	1,000	425	159	102
13	84	93	110	572	273	200	186	900	1,130	419	156	100
14	81	90	100	403	261	190	183	1,000	982	403	150	100
15	84	86	90	311	250	193	183	1,080	950	382	150	100
16	84	79	93	298	242	197	197	1,220	910	343	147	97
17	84	88	93	388	234	190	204	1,370	920	325	144	100
18	84	88	93	608	219	190	212	1,450	870	325	144	100
19	84	86	90	564	208	183	250	1,530	765	320	141	97
20	84	86	88	454	200	179	329	1,330	672	298	138	95
21	84	75	86	372	197	176	448	1,150	608	286	138	95
22	84	77	86	334	193	176	557	960	579	273	135	95
23	84	b77	84	459	186	179	672	850	550	269	132	95
24	84	b77	84	448	186	193	722	774	516	257	135	95
25	84	b75	84	414	176	212	706	697	503	250	138	95
26	84	b74	84	357	*176	197	722	731	516	242	141	93
27	84	a74	b84	316	176	200	1,170	870	516	234	144	95
28	84	a74	b86	290	173	200	1,230	940	497	234	144	113
29	84	a70	b88	290	-	204	993	*1,080	465	223	144	105
30	86	b75	90	294	-	208	812	1,080	454	219	132	105
31	90	-	88	427	-	*204	-	950	-	212	129	-
Total	2,611	2,459	2,722	9,860	8,420	5,778	12,182	31,081	22,458	11,320	4,902	3,125
Mean	84.2	82.0	87.8	318	301	186	406	1,003	749	365	158	104
Cfsm	0.558	0.543	0.581	2.11	1.99	1.23	2.69	6.64	4.96	2.42	1.05	0.689
In.	0.64	0.61	0.67	2.43	2.07	1.42	3.00	7.65	5.53	2.79	1.21	0.77
Ac-ft	5,180	4,880	5,400	19,560	16,700	11,460	24,160	61,650	44,540	22,450	9,720	6,200

Calendar year 1952: Max 1,450 Min 70 Mean 279 Cfsm 1.85 In. 25.16 Ac-ft 202,600
Water year 1952-53: Max 1,530 Min 70 Mean 320 Cfsm 2.12 In. 28.79 Ac-ft 231,900

Peak discharge (base, 700 cfs).--Apr. 27 (11 to 12 p.m.) 1,370 cfs (3.00 ft); May 6 (11:30 p.m.) 1,400 cfs (3.02 ft); May 18 (11:30 p.m.) 1,620 cfs (3.18 ft); May 29 (10 p.m.) 1,200 cfs (2.87 ft); June 12 (6 to 8:30 p.m.) 1,220 cfs (2.91 ft).

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for nearby stations.
b Stage-discharge relation affected by ice.

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Klickitat River near Glenwood, Wash.

Location.--Lat 46°05'20" (revised), long. 121°15'30", in SE¼ sec. 14, T. 7 N., R. 12 E., on left bank half a mile downstream from Dairy Creek, 5 miles north of Glenwood, and 7 miles upstream from Trout Creek.

Drainage area.--360 sq mi.

Records available.--October 1909 to September 1953 (1920-28 incomplete).

Gage.--Water-stage recorder. Datum of gage is about 1,703 ft above mean sea level, datum of 1929. Prior to July 19, 1910, staff gage and July 19 to Dec. 16, 1910, water-stage recorder, at site 1 mile upstream at different datum. Dec. 17, 1910, to Nov. 6, 1928, water-stage recorder at site 50 ft downstream at datum 1 ft higher, and Nov. 7, 1928, to Sept. 30, 1934, at present site at datum 1 ft higher.

Average discharge.--36 years (1909-20, 1928-53), 828 cfs.

Extremes.--Maximum discharge during year, 2,830 cfs May 18 (gage height, 5.98 ft); minimum, 271 cfs Nov. 26 (gage height, 3.22 ft).
1909-53: Maximum discharge, 9,870 cfs Dec. 22, 1933 (gage height, 7.9 ft, present datum), from rating curve extended above 2,000 cfs; minimum, 204 cfs Nov. 28, 1931.

Remarks.--Records good. All low-water flow of Hellroaring Creek, a tributary of Big Muddy Creek, is diverted for irrigation. No regulation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 18 to Sept. 27)

3.2	260	5.0	1,700
3.6	495	5.5	2,250
4.0	780	6.0	2,850
4.5	1,200		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	348	332	337	337	1,600	607	628	1,730	1,800	*1,050	607	436
2	*348	326	342	370	1,430	586	621	1,610	1,790	1,070	586	443
3	348	326	348	443	1,380	579	635	1,590	1,780	1,130	579	418
4	342	326	359	394	1,340	579	635	1,770	1,780	1,160	*572	418
5	342	326	354	370	1,250	572	642	2,050	1,780	1,180	572	412
6	342	326	364	*348	1,200	565	649	2,410	1,770	1,200	586	412
7	337	320	359	400	1,230	572	649	2,490	1,780	1,220	586	418
8	337	320	354	544	1,200	593	663	2,290	1,780	1,300	558	412
9	337	310	354	1,120	1,100	621	635	2,070	1,680	1,250	544	*406
10	332	332	354	908	1,050	656	614	1,900	1,640	1,160	530	400
11	332	337	354	1,140	988	677	614	1,790	1,680	1,140	523	412
12	332	354	412	1,510	932	684	607	1,810	1,930	1,150	516	430
13	326	370	430	1,390	900	663	593	1,940	2,230	1,150	558	412
14	326	*364	388	1,100	868	649	586	2,020	2,050	1,120	565	412
15	326	354	364	916	844	663	579	2,110	1,950	1,040	558	412
16	326	337	364	900	828	677	600	2,220	1,880	964	544	382
17	320	348	354	1,110	804	656	614	2,390	1,830	932	544	359
18	320	348	354	1,580	758	656	628	2,610	1,760	940	516	382
19	320	348	348	1,630	698	642	712	2,720	1,620	924	516	388
20	315	342	348	1,410	705	621	844	2,480	1,480	852	509	376
21	320	332	348	1,200	691	614	1,060	2,260	1,370	812	482	370
22	320	320	354	1,120	677	614	1,250	2,020	1,310	796	450	370
23	315	315	332	1,370	635	614	1,420	1,840	1,280	780	430	359
24	320	310	337	1,310	635	642	1,530	1,730	1,220	750	418	342
25	320	304	337	1,250	*628	670	1,500	1,590	1,200	728	430	337
26	320	298	337	1,110	621	649	1,560	1,600	1,180	705	443	332
27	315	310	337	1,010	621	649	2,290	1,840	1,170	684	476	332
28	315	304	326	956	614	649	2,410	*1,920	1,140	677	450	443
29	320	288	348	948	-	649	2,150	2,070	1,090	663	443	388
30	332	298	354	932	-	656	1,920	2,110	1,060	670	424	412
31	337	-	348	1,170	-	*649	-	1,940	-	649	418	-
Total	10,190	9,825	10,999	30,296	26,227	19,573	29,838	62,920	48,010	29,846	15,933	11,825
Mean	329	328	355	977	937	631	995	2,030	1,600	963	514	394
Cfsm	0.914	0.911	0.986	2.71	2.60	1.75	2.76	5.64	4.44	2.68	1.43	1.09
In.	1.05	1.01	1.14	3.13	2.71	2.02	3.08	6.50	4.96	3.08	1.65	1.22
Ac-ft	20,210	19,490	21,820	60,090	52,020	38,820	59,180	124,800	95,230	59,200	31,600	23,450

Calendar year 1952: Max 2,730 Min 288 Mean 774 Cfsm 2.15 In. 29.27 Ac-ft 562,000
Water year 1952-53: Max 2,720 Min 288 Mean 837 Cfsm 2.32 In. 31.55 Ac-ft 605,900

* Discharge measurement made on this day.

Little Klickitat River near Wahkiacus, Wash.

Location.--Lat 45°50'30", long. 121°03'20", in SE¼ sec. 9, T. 4 N., R. 14 E., on right bank half a mile downstream from Bowman Creek, three-quarters of a mile upstream from mouth, and 2 miles northeast of Wahkiacus.

Drainage area.--280 sq mi, approximately.

Records available.--November 1944 to September 1948, October 1950 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 580 ft (by barometer). Prior to Dec. 29, 1950, staff gage and crest-stage indicator at same site and datum.

Average discharge.--6 years (1945-48, 1950-53), 204 cfs.

Extremes.--Maximum discharge during year, 4,140 cfs Jan. 9 (gage height, 7.79 ft), from rating curve extended above 2,600 cfs; minimum, 30 cfs Aug. 15; minimum gage height, 2.47 ft Oct. 3-8, 13, 14, Aug. 15.
1944-48, 1950-53: Maximum discharge, 4,450 cfs Feb. 4, 1952 (gage height, 8.0 ft), from rating curve extended above 2,600 cfs; maximum gage height, 9.4 ft probably Jan. 7, 1948, from high-water mark; minimum discharge observed, 17 cfs Aug. 3-6, 11, 16-27, Aug. 29 to Sept. 3, 1945, Aug. 30, 1947; minimum gage height observed, 1.24 ft Aug. 25, 26, 27, 1945.

Remarks.--Records good. Some small diversions above station for irrigation. No regulation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

2.4	26	4.5	650
2.7	62	5.0	970
3.0	110	5.5	1,370
3.5	225	6.0	1,850
4.0	405	7.0	3,020

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	40	41	61	812	240	193	225	152	76	36	36
2	34	40	42	90	806	228	186	209	144	71	36	37
3	33	41	43	164	907	222	180	196	140	68	36	36
4	*33	42	46	116	776	217	176	193	135	66	36	35
5	*33	42	46	87	818	209	171	203	133	65	*36	35
6	33	42	46	77	872	203	168	217	135	62	38	35
7	33	42	59	125	812	196	168	222	135	61	36	36
8	34	42	51	580	686	196	173	209	129	56	35	35
9	34	41	49	2,340	600	196	171	198	123	55	35	35
10	34	43	61	722	545	201	159	186	120	55	34	*34
11	34	43	56	1,020	486	212	152	173	110	52	34	35
12	35	46	64	1,220	436	228	152	164	127	51	32	34
13	35	*48	68	1,000	*405	206	150	155	140	48	33	33
14	34	46	59	639	381	198	144	152	129	49	32	33
15	36	43	55	486	353	198	140	152	121	49	31	*33
16	36	41	51	628	414	220	140	155	120	48	31	33
17	36	41	49	1,040	585	*212	140	159	112	46	32	34
18	37	41	48	1,740	515	222	135	164	108	43	32	35
19	36	41	47	1,980	401	228	133	183	105	42	31	33
20	37	41	49	1,780	373	214	142	171	103	43	33	33
21	38	41	49	1,130	349	214	*159	178	100	42	32	33
22	38	40	56	970	329	212	186	162	95	40	33	33
23	38	52	54	907	300	217	203	152	91	40	33	34
24	38	70	49	722	294	225	*196	164	88	40	34	34
25	38	43	44	722	276	252	193	144	87	40	36	34
26	38	40	46	758	269	234	209	*162	83	40	40	33
27	38	41	46	668	262	231	298	190	82	40	41	34
28	38	40	44	752	252	222	322	171	82	38	43	35
29	40	41	51	698	-	214	290	164	82	38	43	35
30	40	41	*68	606	-	209	255	162	*79	35	41	36
31	40	-	70	674	-	201	-	159	-	36	38	-
Total	1,115	1,295	1,607	24,502	14,314	6,677	5,484	5,494	3,396	1,535	1,093	1,031
Mean	36.0	43.2	51.8	790	511	215	183	177	113	49.5	35.3	34.4
Ac-ft	2,210	2,570	3,190	48,600	28,390	13,240	10,880	10,900	6,740	3,040	2,170	2,040

Calendar year 1952: Max 3,060 Min 30 Mean 156 Ac-ft 113,300
Water year 1952-53: Max 2,340 Min 31 Mean 185 Ac-ft 134,000

Peak discharge (base, 1,600 cfs).--Jan. 9 (3 a.m.) 4,140 cfs (7.79 ft); Jan. 12 (12:30 a.m.) 1,830 cfs (5.98 ft); Jan. 18 (7 p.m.) 2,720 cfs (6.76 ft).
* Discharge measurement made on this day.

Klickitat River near Pitt, Wash.

Location.--Lat 45°45', long. 120°12', in SW¼ sec. 8, T. 3 N., R. 13 E., on left bank, 3½ miles south of Pitt, 5 miles upstream from Silvias Creek, and 7 miles upstream from mouth at Lyle.

Drainage area.--1,290 sq mi, approximately.

Records available.--July 1909 to January 1912, October 1928 to September 1953. Published as "at Klickitat" 1909-12 and as "at Pitt" 1928-35.

Gage.--Water-stage recorder. Altitude of gage is 285 ft (from river-profile map). July 3, 1909, to Jan. 31, 1912, staff gage at Klickitat just downstream from Snider Creek, 7 miles upstream at different datum. Oct. 1, 1928, to Sept. 30, 1935, staff gage at site 175 ft downstream from highway bridge at Pitt, 3.5 miles upstream from present site, at different datum.

Average discharge.--27 years (1909-11, 1928-53), 1,548 cfs.

Extremes.--Maximum discharge during year, 10,900 cfs Jan. 9 (gage height, 8.96 ft); minimum, 679 cfs Sept. 25, 26, 28; minimum gage height, 3.87 ft Nov. 30.
1909-12, 1928-53: Maximum discharge observed, 21,000 cfs Dec. 22, 1933 (gage height, 12.5 ft, site and datum then in use), from rating curve extended above 3,000 cfs; minimum discharge, 466 cfs Feb. 4, 1937.

Remarks.--Records good. Small diversions above station for irrigation; 73.2 cfs measured in Hellroaring irrigation canal on Aug. 25, 1948. No regulation. Records of water temperatures for water year 1953 are given in WSP 1293.

Revisions (water years).--WSP 794: 1934. WSP 1218: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

3.9	670	6.0	3,530
4.2	955	7.0	5,530
4.6	1,400	8.0	7,980
5.0	1,920	9.0	10,800
5.5	2,680		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	733	760	751	846	5,050	1,730	1,650	2,840	2,570	1,510	997	788
2	742	751	779	935	*4,840	1,650	1,640	2,580	2,490	1,520	955	808
3	751	751	788	1,210	5,010	1,520	1,620	2,420	2,460	1,580	935	788
4	*751	751	915	1,160	4,900	1,510	1,580	2,540	2,440	1,610	925	770
5	742	751	836	1,040	4,690	1,500	1,570	2,820	2,420	1,620	*915	760
6	742	751	836	976	4,920	1,470	1,570	3,320	2,390	1,660	935	760
7	742	751	895	1,160	4,780	1,450	1,530	3,480	2,410	1,700	935	779
8	742	742	826	2,640	4,450	1,460	1,600	3,350	2,390	1,740	915	760
9	742	742	826	7,570	4,000	1,500	1,570	3,030	2,270	1,750	885	760
10	742	760	846	4,370	3,690	1,560	1,500	2,740	2,180	1,640	875	*751
11	751	779	846	4,470	3,480	1,620	1,450	2,600	2,180	1,580	865	751
12	742	798	875	5,490	3,210	1,700	1,450	2,550	2,390	1,580	855	779
13	742	*836	935	5,030	*3,010	1,640	1,420	2,580	2,920	1,580	855	779
14	742	826	895	3,870	2,710	1,580	1,450	2,710	2,780	1,570	905	760
15	742	808	855	3,180	2,580	1,600	1,380	2,810	2,600	1,520	885	770
16	742	798	826	3,550	2,680	1,680	1,350	2,920	2,540	1,390	895	760
17	751	798	826	4,840	3,180	*1,690	1,390	3,160	2,460	1,330	885	715
18	742	798	817	7,380	2,890	1,680	1,390	3,390	2,440	1,340	865	724
19	733	798	808	9,460	2,570	1,740	1,440	3,750	2,280	1,330	865	742
20	733	788	817	8,410	2,440	1,720	1,610	3,460	2,120	1,280	875	733
21	742	788	808	6,580	2,320	1,720	*1,850	3,210	1,950	1,210	846	724
22	733	760	846	5,550	2,210	1,700	2,180	2,860	1,850	1,200	798	724
23	742	751	817	5,580	2,050	1,740	2,360	2,570	1,810	1,180	788	724
24	742	742	798	4,980	1,980	1,790	2,520	2,460	1,740	1,130	770	715
25	733	742	798	4,900	1,920	1,890	2,500	2,260	1,700	1,090	788	706
26	742	733	788	4,690	1,850	1,810	2,540	*2,270	1,680	1,070	808	697
27	751	742	798	4,190	1,810	1,840	3,440	2,710	1,650	1,070	846	697
28	751	751	779	4,160	1,790	1,810	4,000	2,680	1,610	1,060	826	751
29	760	724	817	4,180	-	1,770	3,570	2,870	1,580	1,040	826	751
30	760	715	855	4,000	-	1,750	3,160	2,980	*1,550	1,030	798	724
31	770	-	*865	4,120	-	1,720	-	2,760	-	1,030	779	-
Total	23,075	22,985	25,767	130,517	91,010	51,540	58,280	88,680	65,850	42,940	26,895	22,450
Mean	744	766	831	4,210	3,250	1,663	1,943	2,861	2,195	1,385	868	748
Cfsm	0.577	0.594	0.644	3.26	2.52	1.29	1.51	2.22	1.70	1.07	0.673	0.580
In.	0.67	0.66	0.74	3.76	2.62	1.49	1.68	2.56	1.90	1.24	0.78	0.65
Ac-ft	45,770	45,590	51,110	258,900	180,500	102,200	115,600	175,900	130,600	85,170	53,350	44,530

Calendar year 1952: Max 10,500 Min 715 Mean 1,633 Cfsm 1.27 In. 17.22 Ac-ft 1,185,000
Water year 1952-53: Max 9,460 Min 697 Mean 1,781 Cfsm 1.38 In. 18.75 Ac-ft 1,289,000

Peak discharge (base, 4,000 cfs).--Jan. 9 (4:15 a.m.) 10,900 cfs (8.96 ft); Jan. 12 (1:15 a.m.) 6,060 cfs (7.17 ft); Jan. 19 (12:30 a.m.) 10,400 cfs (8.82 ft); Apr. 28 (6 a.m.) 4,140 cfs (6.38 ft).
* Discharge measurement made on this day.

Green Point Creek below North Fork, near Dee, Oreg.

Location.--Lat 45°35'20", long. 121°39'30", in NE¼ sec. 11, T. 1 N., R. 9 E., on left bank three-quarters of a mile upstream from mouth, 1¼ miles downstream from North Fork, and 1½ miles west of Dee.

Drainage area.--20.0 sq mi.

Records available.--August 1949 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 1,100 ft above mean sea level (by barometer).

Extremes.--Maximum discharge during year, 1,670 cfs Jan. 9 (gage height, 4.70 ft); maximum gage height, about 5.0 ft Jan. 9 (momentary backwater from logjam); minimum discharge, 12 cfs Oct. 1, 2, 6-30, Nov. 25.
1949-53: Maximum discharge, that of Jan. 9, 1953; maximum gage height, that of Jan. 9, 1953; minimum discharge, 12 cfs Sept. 18-24, 1951, Oct. 1, 2, 6-30, Nov. 25, 1952.

Remarks.--Records good except those for period July through September, which are fair. Water is diverted above station in NW¼ sec. 10, T. 1 N., R. 9 E., and from North Fork in SE¼SW¼ sec. 30, T. 2 N., R. 9 E., and in SW¼ sec. 3, T. 1 N., R. 9 E., for irrigation outside Green Point Creek basin near Oak Grove. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 8				Jan. 9 to Sept. 30			
0.5	12	1.5	127	0.5	16	2.0	265
.6	16	2.0	231	.6	22	2.5	405
.7	22	2.5	380	.9	54	3.5	810
1.0	54			1.2	96	4.2	1,270
				1.5	150		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	16	14	38	449	99	112	152	112	52	27	22
2	12	16	*15	79	351	93	106	138	107	50	27	21
3	13	16	16	185	516	87	102	128	101	50	27	21
4	13	15	30	121	429	84	101	134	93	49	27	21
5	13	15	25	93	380	81	101	152	90	48	27	21
6	12	15	20	78	432	81	*96	171	98	*47	28	21
7	12	15	22	102	420	81	90	171	110	46	27	21
8	12	15	21	371	315	82	86	160	106	46	26	21
9	12	15	18	*1,080	248	87	78	140	96	44	26	21
10	12	15	34	477	204	93	77	125	87	43	26	21
11	12	16	43	665	175	109	75	114	87	42	25	21
12	12	18	132	765	154	110	75	109	93	41	25	21
13	12	24	79	540	142	101	73	106	90	41	25	21
14	12	20	53	369	134	93	71	109	81	41	24	21
15	12	18	43	298	126	93	71	107	77	40	24	21
16	12	16	35	694	167	110	73	107	75	38	24	21
17	12	16	30	954	189	104	77	116	73	36	24	21
18	12	16	27	1,240	160	101	81	*128	70	35	24	21
19	12	15	25	790	140	94	96	160	74	34	24	21
20	*12	15	23	568	128	93	117	144	81	34	24	21
21	12	15	23	426	119	96	148	138	73	34	23	21
22	12	15	29	399	114	158	163	128	68	33	23	21
23	12	15	26	480	107	198	211	123	66	32	24	21
24	12	14	22	339	*102	189	186	125	64	32	25	21
25	12	14	21	324	98	180	165	112	62	31	26	21
26	12	14	20	260	99	150	165	129	60	31	*26	21
27	12	14	20	209	104	136	240	189	59	30	26	22
28	12	14	19	221	109	128	223	158	58	29	25	26
29	12	14	33	351	-	119	184	148	57	29	25	26
30	12	14	44	429	-	128	169	138	54	28	24	27
31	13	-	41	488	-	125	-	123	-	28	23	-
Total	376	470	1,003	13,433	6,111	3,483	3,612	4,182	2,422	1,194	781	648
Mean	12.1	15.7	32.4	433	218	112	120	135	80.7	38.5	25.2	21.6
Ac-ft	746	932	1,990	26,640	12,120	6,910	7,160	8,290	4,800	2,370	1,550	1,290

Calendar year 1952: Max 800 Min 12 Mean 70.1 Ac-ft 50,880
Water year 1952-53: Max 1,240 Min 12 Mean 103 Ac-ft 74,800

Peak discharge (base, 850 cfs).--Jan. 9 (4 a.m.) 1,670 cfs (4.70 ft); Jan. 11 (5 p.m.) 948 cfs (3.73 ft); Jan. 18 (4 p.m.) 1,640 cfs (4.67 ft).
* Discharge measurement made on this day.

West Fork Hood River near Dee, Oreg.

Location.--Lat 45°36'00", long. 121°38'20", in SE¼ sec. 1, T. 1 N., R. 9 E., on left bank a quarter of a mile upstream from Dead Point Creek, half a mile upstream from mouth, and 1 mile northwest of Dee.

Drainage area.--96 sq mi, approximately.

Records available.--September 1913 to February 1916 (incomplete), June 1932 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 802.08 ft above mean sea level, datum of 1929. Prior to Feb. 12, 1916, staff gage at site half a mile upstream at different datum.

Average discharge.--21 years (1932-53), 540 cfs.

Extremes.--Maximum discharge during year, 8,690 cfs Jan. 18 (gage height, 10.0 ft); minimum, 112 cfs Nov. 25 (gage height, 1.31 ft).
1913-14, 1932-53: Maximum discharge, 12,900 cfs Dec. 22, 1933 (gage height, 12.4 ft), from rating curve extended above 5,000 cfs; minimum, 93 cfs Aug. 22, 1941 (gage height, 1.37 ft).

Remarks.--Records good. Diversions above station for irrigation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.3	110	5.0	1,940
2.0	280	7.0	4,030
3.0	660	9.2	7,290
4.0	1,220		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	131	140	123	323	2,420	470	538	700	606	310	196	172
2	133	127	*133	570	1,940	442	514	630	554	310	196	172
3	131	127	144	1,020	3,220	426	490	594	514	313	201	168
4	128	129	204	716	2,470	410	482	615	490	307	201	163
5	129	127	191	558	2,090	406	474	726	462	310	214	163
6	127	127	168	474	2,330	400	*458	792	526	*320	239	163
7	127	125	222	655	2,160	403	442	765	660	326	217	163
8	129	125	217	1,890	1,610	422	426	738	578	339	204	159
9	129	123	189	*5,020	1,220	442	406	680	546	320	199	150
10	129	131	336	2,350	1,010	474	386	594	514	298	191	148
11	127	148	425	3,000	864	526	386	538	514	301	189	148
12	123	168	1,030	3,410	754	526	400	518	546	301	186	154
13	123	189	598	2,580	675	486	375	514	542	298	184	157
14	120	174	418	1,710	640	450	368	530	502	310	182	150
15	120	157	342	1,370	606	474	368	514	474	280	191	148
16	120	142	292	3,990	842	586	375	498	450	259	191	148
17	120	137	256	6,040	1,060	550	396	510	442	253	186	144
18	121	135	236	7,150	853	518	403	*582	410	256	182	142
19	125	133	219	4,760	716	510	478	875	430	250	179	142
20	*125	131	209	3,170	645	498	562	776	470	233	182	140
21	127	129	214	2,160	594	550	645	710	414	228	179	137
22	125	127	277	2,670	570	946	680	630	382	228	170	140
23	123	127	242	2,970	542	1,110	886	590	372	222	170	142
24	127	125	219	1,830	*506	985	792	615	355	217	196	137
25	123	120	204	1,770	482	930	705	562	345	214	184	135
26	121	120	199	1,350	470	754	721	721	342	212	*212	133
27	121	121	191	1,080	482	665	1,090	1,060	329	209	206	140
28	121	121	186	1,300	494	620	1,030	848	323	206	201	196
29	123	118	310	2,040	-	574	842	782	320	206	201	163
30	123	120	372	2,460	-	610	792	726	313	201	182	165
31	133	-	339	2,850	-	598	-	665	-	199	174	-
Total	3,885	4,023	8,705	73,236	32,265	17,761	16,910	20,598	13,725	8,236	5,985	4,582
Mean	125	134	281	2,362	1,152	573	564	664	458	266	193	153
Ac-ft	7,710	7,980	17,270	145,300	64,000	35,230	33,540	40,860	27,220	16,340	11,870	9,090

Calendar year 1952: Max 4,040 Min 118 Mean 408 Ac-ft 296,200
Water year 1952-53: Max 7,150 Min 118 Mean 575 Ac-ft 416,400

Peak discharge (base, 4,100 cfs).--Jan. 9 (5 a.m.) 7,240 cfs (9.17 ft); Jan. 11 (6:30 p.m.) 4,460 cfs (7.33 ft); Jan. 18 (2 p.m.) 8,690 cfs (10.0 ft); Jan. 22 (10:30 p.m.) 4,770 cfs (7.56 ft); Jan. 31 (7:30 p.m.) 4,160 cfs (7.10 ft).
* Discharge measurement made on this day.

Hood River near Hood River, Oreg.

Location.--Lat 45°42'00", long. 121°30'40", in SE¼ sec. 36, T. 3 N., R. 10 E., on right bank at Powerdale, a quarter of a mile upstream from Pacific Power & Light Co.'s plant and three-quarters of a mile south of town of Hood River.

Drainage area.--329 sq mi.

Records available.--March 1913 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 106.23 ft above mean sea level, datum of 1929. Prior to Nov. 14, 1934, at site 220 ft upstream at same datum.

Average discharge.--40 years, 1,074 cfs.

Extremes.--Maximum discharge during year, 14,000 cfs Jan. 18; minimum daily 336 cfs Oct. 14. 1913-53: Maximum discharge, 34,000 cfs Jan. 6, 1923 (gage height, 11.1 ft, site then in use), no diversion by power conduit; minimum daily, 165 cfs Aug. 5, 1941.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Many diversions above station for irrigation. Daily discharge regulated by pondage at sawmill at Dee. All records herein include flow in Pacific Power & Light Co.'s conduit, which diverts water 3 miles above station and returns water to river a quarter of a mile below station.

Cooperation.--Water-stage recorder inspected by employees of Pacific Power & Light Co.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	356	384	397	668	4,110	1,130	1,130	1,370	1,400	746	a500	455
2	357	375	*406	1,030	3,360	1,080	1,070	1,270	1,310	752	a500	460
3	360	379	429	1,610	5,330	1,040	1,040	1,200	1,220	785	a520	427
4	356	376	508	1,210	4,290	1,010	1,010	1,240	1,160	777	a500	413
5	352	378	499	964	3,590	974	1,010	1,380	1,120	799	a560	395
6	349	386	470	855	4,140	955	*979	1,510	1,240	*826	a640	395
7	346	382	565	1,130	3,860	953	944	1,480	1,470	862	a560	408
8	355	375	572	2,450	3,080	962	921	1,430	1,360	941	a540	395
9	358	374	491	*7,540	2,560	987	900	1,330	1,240	888	a520	386
10	364	401	705	3,410	2,220	1,030	866	1,200	1,150	823	a490	374
11	357	441	741	4,230	1,980	1,100	856	1,100	1,160	848	476	369
12	355	479	1,610	5,160	a1,700	1,100	890	1,060	1,280	889	473	464
13	344	512	1,100	4,040	a1,500	1,050	860	1,040	1,280	925	467	494
14	336	493	812	2,760	a1,400	a1,000	837	1,060	1,200	977	464	469
15	347	462	696	2,190	a1,300	a1,050	822	1,020	1,170	855	485	450
16	344	439	642	5,550	a1,500	a1,250	834	1,020	1,100	740	510	439
17	349	432	590	9,400	a2,100	a1,150	858	1,060	1,060	700	476	401
18	360	430	564	11,800	a1,800	a1,100	862	*1,170	1,040	700	477	402
19	359	432	546	8,300	a1,600	1,090	924	1,810	998	700	496	442
20	*358	429	535	5,940	a1,500	1,090	1,040	1,590	1,050	652	524	408
21	373	422	540	*4,420	a1,400	1,210	1,220	1,470	933	620	489	a400
22	382	414	670	4,580	a1,350	1,840	1,310	1,330	883	603	442	a410
23	379	409	595	5,080	a1,300	1,870	1,540	1,240	856	605	438	a420
24	382	400	545	3,430	*1,260	1,740	1,450	1,280	819	586	469	a400
25	367	395	516	3,200	1,200	1,680	1,360	1,180	807	576	*415	388
26	359	392	508	2,800	1,180	1,480	1,370	1,470	813	559	505	373
27	348	391	502	*2,350	1,130	1,370	1,900	2,180	787	547	505	395
28	351	383	490	2,520	1,190	1,310	1,880	1,760	798	536	495	545
29	360	375	619	3,240	-	1,210	1,600	1,680	789	532	511	517
30	378	383	747	3,660	-	1,230	1,480	1,600	748	524	455	485
31	376	-	687	4,180	-	1,230	-	1,500	-	a510	440	-
Total	11,117	12,325	19,297	119,697	62,930	37,071	33,763	42,030	32,241	22,383	15,342	12,779
Mean	359	411	622	3,861	2,248	1,196	1,125	1,356	1,075	722	495	426
Ac-ft	22,050	24,440	38,280	237,400	124,800	73,530	66,970	83,370	63,950	44,400	30,430	25,350

Calendar year 1952: Max 6,900 **Min** 334 **Mean** 880 **Ac-ft** 638,600
Water year 1952-53: Max 11,800 **Min** 336 **Mean** 1,153 **Ac-ft** 835,000

Peak discharge (base, 4,600 cfs).--Jan. 9 (7 a.m.) 10,600 cfs; Jan. 11 (8 p.m.) 6,330 cfs; Jan. 18 (2 p.m.) 14,000 cfs; Jan. 22 (10 p.m.) 7,470 cfs; Jan. 31 (9:30 p.m.) 5,820 cfs; Feb. 3 (10 a.m.) 5,960 cfs; Feb. 5 (11:30 p.m.) 5,010 cfs.

* Discharge measurement made on this day.

a No river gage-height record; discharge estimated on basis of recorded range in stage and records for West Fork Hood River near Dee.

White Salmon River near Underwood, Wash.

Location.--Lat 45°45'00", long. 121°31'30", in NW¼ sec. 14, T. 3 N., R. 10 E., on right bank 300 ft downstream from bridge, 1,000 ft downstream from Northwestern Electric Co.'s conduit powerplant, and 2 miles north of Underwood and mouth.

Drainage area.--390 sq mi, approximately.

Records available.--October 1912 to February 1913, March 1915 to September 1930, September 1935 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 150 ft (from river-profile map). Prior to March 1913, reference point at dam 1 mile upstream at different datum. March 1915 to July 16, 1918, water-stage recorder at site 200 ft upstream at datum 3.24 ft higher. July 17, 1918, to Sept. 30, 1930, water-stage recorder at site 200 ft upstream at datum 2.24 ft higher than present datum.

Average discharge.--33 years (1915-30, 1935-53), 1,075 cfs.

Extremes.--Maximum discharge during year, 7,170 cfs Jan. 18 (gage height, 8.50 ft); minimum, 42 cfs Dec. 13 (gage height, 1.43 ft); minimum daily, 411 cfs Nov. 27.
1915-30, 1935-53: Maximum discharge, 9,700 cfs Dec. 29, 1917 (gage height, 9.5 ft, site and datum then in use); practically no flow at times when powerplant is shut down.

Remarks.--Records excellent. Water diverted to irrigate about 4,000 acres in the Trout Lake area. Low and medium flow regulated by powerplant of the Northwestern Electric Co.

Revisions (water years).--WSP 484: 1915-17. WSP 1218: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 8 to Feb. 13, Sept. 7-12)

3.1	391	5.5	2,170
3.5	570	6.0	2,770
4.0	865	7.0	4,250
4.5	1,220	8.0	6,000
5.0	1,650		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	600	598	534	552	2,970	1,520	1,300	1,580	1,540	1,130	798	770
2	578	598	547	730	2,780	1,490	1,300	1,510	1,530	1,150	832	752
3	*574	698	556	965	2,840	1,460	1,270	1,440	1,450	1,140	820	761
4	590	662	602	765	2,910	1,410	1,270	1,480	1,400	1,200	782	782
5	551	565	624	770	2,760	1,410	1,270	1,560	1,410	1,190	830	702
6	572	550	544	659	2,640	1,380	1,240	1,750	1,410	1,210	*785	722
7	562	539	656	794	2,620	1,360	1,260	1,850	1,470	1,220	888	669
8	556	557	634	1,590	2,580	1,360	1,250	1,860	1,480	1,230	822	663
9	567	543	614	3,790	1,330	1,360	1,180	1,740	1,420	1,240	720	644
10	565	599	622	2,580	2,220	1,360	1,200	1,610	1,420	1,240	852	*653
11	574	588	622	2,770	2,140	1,370	1,190	1,480	1,450	1,200	730	616
12	568	571	657	3,260	*2,090	1,380	1,130	1,400	1,510	1,140	702	674
13	612	610	702	3,320	2,020	1,350	1,160	1,430	1,850	1,190	806	606
14	542	*641	620	2,690	1,930	1,330	1,160	1,420	1,830	1,060	797	613
15	539	641	600	2,240	1,880	1,320	1,130	1,430	1,590	1,100	753	662
16	563	641	568	2,520	1,990	1,420	1,070	1,430	1,530	1,000	714	610
17	564	542	580	3,540	2,090	*1,370	1,110	1,520	1,500	1,060	790	614
18	568	510	547	5,180	1,980	1,390	1,090	1,600	1,480	1,030	680	600
19	521	569	556	5,700	1,880	1,380	1,080	1,830	1,420	985	770	610
20	474	581	578	4,610	1,850	1,380	1,140	1,800	1,370	954	762	591
21	530	582	550	3,620	1,790	1,420	1,180	1,780	1,340	940	734	653
22	578	575	583	3,150	1,770	1,450	1,280	1,730	1,320	917	736	519
23	608	524	566	3,210	1,700	1,540	1,390	1,630	1,280	935	673	640
24	603	626	560	2,900	1,640	1,560	*1,500	1,590	1,240	894	734	596
25	598	512	540	2,680	1,610	1,550	1,490	1,510	1,170	888	697	596
26	598	542	575	2,470	1,600	1,480	1,500	1,510	1,240	853	739	596
27	513	411	501	2,240	1,570	1,460	1,800	*1,620	1,180	889	808	600
28	548	664	485	2,220	1,530	1,430	1,950	1,680	1,150	800	798	616
29	525	506	563	2,280	-	1,390	1,880	1,690	1,200	922	800	683
30	592	510	545	2,390	-	1,370	1,730	1,730	*1,220	826	736	660
31	598	-	*593	2,620	-	1,360	-	1,850	-	907	778	-
Total	17,531	17,055	18,024	78,805	79,710	43,810	39,500	49,840	42,000	32,440	23,866	19,473
Mean	566	568	581	2,542	2,132	1,413	1,317	1,608	1,400	1,046	770	649
Ac-ft	34,770	33,830	35,750	156,300	118,400	86,900	78,350	98,860	83,310	64,340	47,340	38,620

Calendar year 1952: Max 4,710 Min 411 Mean 1,052 Ac-ft 764,000
Water year 1952-53: Max 5,700 Min 411 Mean 1,211 Ac-ft 876,800

* Discharge measurement made on this day.

Little White Salmon River at Willard, Wash.

Location.--Lat 45°47'00", long. 121°37'30", in NW¼ sec. 1, T. 3 N., R. 9 E., on right bank a quarter of a mile downstream from Lava Creek at Willard.

Drainage area.--117 sq mi.

Records available.--November 1903 to August 1906 (fragmentary), December 1944 to September 1953. Published as "below Lava Creek, near Cooks" 1903-6.

Gage.--Water-stage recorder. Altitude of gage is 1,230 ft (from topographic map). Prior to Aug. 6, 1906, nonrecording gage near present site.

Average discharge.--8 years (1945-53), 466 cfs.

Extremes.--Maximum discharge during year, 3,330 cfs Jan. 18 (gage height, 8.90 ft); minimum, 1.6 cfs Dec. 3 (gage height, 0.73 ft).
1903-6, 1944-53: Maximum discharge, 4,140 cfs Dec. 15, 1946 (gage height, 9.50 ft), from rating curve extended above 2,500 cfs; minimum, that of Dec. 3, 1952.

Remarks.--Records good except those below 5 cfs and those for period of no gage-height record, which are fair. Broughton Lumber Co. diversion may at times carry as much as 30 cfs past this station (see miscellaneous measurements at end of this volume). Other diversions above station for water supply, irrigation, and hatchery purposes. No regulation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.7	1.4	3.5	251
1.0	5.0	4.0	340
1.3	14.5	5.0	570
1.6	28	6.0	850
2.0	56	7.0	1,290
2.5	106	8.0	2,240
3.0	170	9.0	3,460

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	8.5	2.7	106	2,250	715	555	338	425	366	271	155
2	34	8.2	1.8	*157	1,960	679	530	330	425	*366	268	150
3	33	7.3	1.8	436	2,030	652	510	327	425	364	266	146
4	37	6.8	24	350	2,010	628	490	332	425	362	265	140
5	*31	6.3	26	266	1,900	608	478	348	427	360	260	136
6	29	6.0	21	224	1,840	590	466	362	432	356	*258	133
7	28	5.5	44	320	1,850	572	453	373	439	354	254	130
8	27	a5.2	68	1,190	1,740	562	446	373	436	354	249	126
9	26	a5.0	50	2,760	1,600	555	432	364	432	352	251	124
10	25	a4.5	55	1,650	1,480	550	416	356	430	348	242	120
11	24	5.5	56	1,550	1,360	555	407	352	430	344	239	*117
12	23	8.2	148	1,860	1,250	560	405	348	432	340	234	113
13	21	17	148	1,610	1,160	542	396	346	427	336	231	110
14	18.5	17	107	1,140	*1,100	522	381	346	421	332	226	105
15	17.5	*13.5	82	967	1,060	536	368	346	421	327	222	102
16	16.5	9.2	66	1,360	1,140	618	364	344	416	321	219	98
17	15.5	*6.3	57	2,280	1,240	642	360	344	412	317	212	96
18	15	4.0	53	2,870	1,120	*635	350	360	407	314	209	93
19	14.5	3.2	50	2,950	1,050	625	350	375	407	310	206	88
20	13.5	2.7	50	2,420	1,000	622	356	364	405	307	201	86
21	13	2.5	53	2,100	967	640	360	377	396	303	198	82
22	13	2.3	72	2,020	937	712	*354	392	392	299	193	79
23	12	2.1	76	2,310	898	829	356	388	388	296	188	77
24	12	2.0	69	1,970	862	871	344	392	385	294	191	74
25	11	1.8	61	1,830	823	844	332	385	383	290	190	72
26	10	1.8	57	1,700	796	766	329	392	379	289	191	70
27	9.5	1.8	53	1,580	769	697	362	*430	377	285	188	68
28	8.8	8.2	50	1,580	742	552	360	430	375	283	184	75
29	8.2	22	54	1,860	-	820	350	432	373	282	176	70
30	8.5	16	80	2,030	-	608	348	439	370	280	166	70
31	8.8	-	102	2,240	-	580	-	436	-	275	160	-
Total	598.8	210.4	1,836.3	47,686	36,934	19,789	12,008	11,521	12,292	10,006	6,808	3,105
Mean	19.3	7.01	59.2	1,538	1,319	638	400	372	410	323	220	104
Ac-ft	1,190	417	3,640	94,580	73,260	39,250	23,820	22,850	24,380	19,850	13,500	6,160

Calendar year 1952: Max 2,770 **Min** 1.8 **Mean** 311 **Ac-ft** 226,100
Water year 1952-53: Max 2,950 **Min** 1.8 **Mean** 446 **Ac-ft** 322,900

Peak discharge (base, 1,600 cfs).--Jan. 9 (7:30 a.m.) 3,290 cfs (8.87 ft); Jan. 12 (6:30 a.m.) 1,970 cfs (7.74 ft); Jan. 18 (11:30 p.m.) 3,330 cfs (8.90 ft); Jan. 23 (2:30 a.m.) 2,390 cfs (8.14 ft); Jan. 31 (8:30 p.m.) 2,430 cfs (8.17 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for station near Willard.

Little White Salmon River below Lapham Creek, near Willard, Wash.

Location.--Lat 45°46'00, long. 121°37'40", in NW¼ sec. 12, T. 3 N., R. 9 E., on right bank 0.3 mile downstream from Lapham Creek and 1.2 miles south of Willard.

Drainage area.--123 sq mi.

Records available.--September 1949 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 980 ft (from topographic map).

Extremes.--Maximum discharge during year, 3,610 cfs Jan. 9 (gage height, 5.98 ft); minimum, 59 cfs Oct. 31 (gage height, 1.35 ft).
1949-53: Maximum discharge, that of Jan. 9, 1953; minimum, that of Oct. 31, 1952.

Remarks.--Records good below 500 cfs and fair above. Broughton Lumber Co. diversion may at times carry as much as 30 cfs past station (see miscellaneous measurements at end of this volume). Other diversions above station for water supply, irrigation, and hatchery purposes. Possibly some regulation.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
1.3	52	3.5	822	1.7	103	3.5	805
1.7	120	4.0	1,140	2.1	199	4.0	1,140
2.1	220	5.0	2,140	2.5	330	5.0	2,140
2.5	352	6.0	3,640	3.0	535	6.0	3,640
3.0	562						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	72	66	200	2,240	835	640	385	*494	425	312	199
2	100	71	65	*229	1,970	799	610	381	494	*425	309	194
3	98	69	65	557	2,030	757	590	377	494	*429	306	191
4	100	69	91	438	1,980	723	565	381	499	421	302	186
5	*95	69	95	334	1,880	696	555	393	499	417	302	183
6	95	68	91	289	1,820	674	535	417	508	413	298	183
7	93	68	116	401	1,820	652	517	425	508	409	*292	177
8	91	68	142	1,370	1,710	635	512	421	504	409	288	175
9	91	66	122	2,900	1,590	625	494	417	499	405	288	172
10	91	68	129	1,590	1,510	620	476	405	499	397	284	167
11	89	68	131	1,600	1,450	625	472	401	499	393	281	*162
12	89	72	214	1,870	1,390	635	468	397	499	389	278	160
13	87	80	223	1,650	1,330	610	458	397	494	385	274	157
14	86	82	179	1,320	*1,280	590	441	397	490	377	270	154
15	84	*79	152	1,150	1,240	605	425	393	486	373	267	150
16	82	71	135	1,500	1,340	712	425	393	481	373	264	152
17	80	68	127	2,280	1,410	745	417	397	476	365	260	154
18	80	66	122	3,110	1,320	*740	405	413	472	358	250	152
19	79	66	120	3,140	1,240	728	401	425	472	358	247	150
20	79	65	118	2,410	1,190	723	409	421	468	354	244	150
21	79	65	127	2,120	1,140	757	417	433	458	351	241	147
22	79	65	144	2,030	1,090	865	*405	450	454	344	238	142
23	77	65	149	2,280	1,050	993	413	445	450	340	228	142
24	77	63	140	1,940	1,010	1,030	393	445	445	337	231	138
25	77	63	133	1,820	958	986	381	441	445	334	231	136
26	74	63	129	1,700	917	898	377	454	441	330	231	136
27	72	63	122	1,590	864	841	421	490	437	330	231	133
28	72	68	120	1,620	865	769	417	*490	433	326	225	142
29	71	84	124	1,880	-	723	401	494	433	323	219	136
30	72	79	152	2,070	-	712	393	499	429	320	208	138
31	72	-	176	2,230	-	679	-	504	-	316	202	-
Total	2,613	2,083	4,019	49,618	39,654	22,982	13,833	13,181	14,260	11,526	8,101	4,758
Mean	84.3	69.4	130	1,601	1,416	741	461	425	475	372	261	159
Ac-ft	5,180	4,130	7,970	98,420	78,650	45,580	27,440	26,140	28,280	22,860	16,070	9,440

Calendar year 1952: Max 2,740 Min 63 Mean 373 Ac-ft 270,500
Water year 1952-53: Max 3,140 Min 63 Mean 511 Ac-ft 370,200

Peak discharge (base, 1,500 cfs).--Jan. 9 (8 a.m.) 3,610 cfs (5.98 ft); Jan. 12 (5:30 a.m.) 1,950 cfs (4.84 ft); Jan. 18 (8 p.m.) 3,540 cfs (5.94 ft); Jan. 31 (7 to 10 p.m.) 2,390 cfs (5.19 ft).
* Discharge measurement made on this day.

Wind River above Trout Creek, near Carson, Wash.

Location.--Lat 45°48'30", long. 121°54'30", in NE¼ sec. 26, T. 4 N., R. 7 E., on leftbank bank 30 ft below bridge, three-quarters of a mile upstream from Trout Creek, and 7 miles northwest of Carson.

Drainage area.--108 sq mi.

Records available.--October 1944 to September 1953.

Gage.--Staff gage and crest-stage indicator; gage read twice daily. Altitude of gage is 850 ft (from topographic map).

Average discharge.--9 years, 571 cfs.

Extremes.--Maximum discharge during year, 6,260 cfs Jan. 9 (gage height, 13.15 ft); minimum observed, 60 cfs Nov. 29, 30 (gage height, 1.46 ft).
1944-53: Maximum discharge, 8,880 cfs Feb. 8, 1945 (gage height, 15.5 ft, from high-water mark), from rating curve extended above 5,000 cfs; minimum observed, 52 cfs Oct. 27-30, 1945.

Remarks.--Records good. Very small regulation by fish hatchery dam above station. No diversion above station which is not returned to stream.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.4	56	6.0	1,050
1.7	78	7.0	1,500
2.0	104	8.0	2,030
2.5	158	9.0	2,650
3.0	231	10.0	3,380
3.5	317	11.0	4,200
4.0	422	12.5	5,600
5.0	690		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	73	63	234	2,760	420	588	738	568	297	130	118
2	69	72	71	520	2,030	410	528	657	*542	292	127	113
3	68	71	82	*1,150	2,620	404	500	621	515	*313	125	108
4	68	70	174	860	2,240	373	475	648	492	308	123	103
5	66	70	204	684	1,940	358	465	730	472	301	122	101
6	*66	68	154	621	1,850	354	453	856	508	304	132	99
7	66	67	178	684	2,030	348	439	836	654	294	126	96
8	66	67	200	1,910	1,880	366	429	790	597	308	*121	95
9	66	68	174	5,400	1,420	395	417	727	542	281	119	94
10	66	69	191	2,900	1,170	404	404	651	530	266	115	92
11	66	78	204	3,460	1,040	492	386	576	508	262	113	90
12	66	83	741	4,470	878	612	406	552	570	252	109	*90
13	65	99	570	3,300	808	540	410	542	555	242	107	88
14	65	105	410	2,270	756	475	397	532	502	228	104	86
15	64	96	325	1,820	720	495	384	522	490	220	104	84
16	64	*84	274	2,720	*780	639	379	518	470	221	103	84
17	64	78	239	4,020	842	570	390	530	453	208	101	84
18	64	78	215	4,830	752	532	406	570	434	202	100	84
19	64	76	197	5,100	687	*600	444	842	415	191	99	82
20	64	76	184	3,820	642	597	518	752	444	184	99	80
21	64	72	198	2,960	594	597	579	684	406	178	99	80
22	64	72	220	2,620	565	724	606	752	392	170	96	81
23	64	69	212	3,620	528	902	*727	681	366	162	95	81
24	65	69	197	2,450	502	998	738	687	348	158	108	80
25	65	66	179	2,420	475	1,020	675	645	338	154	111	78
26	65	65	170	1,970	456	906	696	603	334	150	151	78
27	67	62	167	1,680	451	758	990	748	342	145	221	79
28	66	62	162	1,600	446	702	978	744	330	140	168	100
29	67	61	184	1,750	-	639	867	702	321	138	152	91
30	72	60	344	1,910	-	618	804	660	312	136	131	107
31	73	-	362	2,650	-	603	-	621	-	134	125	-
Total	2,048	2,206	7,245	76,403	31,864	17,851	16,478	20,717	13,750	6,839	3,734	2,726
Mean	66.1	73.5	234	2,465	1,138	576	549	668	458	221	120	90.9
Cfsm	0.612	0.681	2.17	22.8	10.5	5.33	5.08	6.19	4.24	2.05	1.11	0.842
In.	0.71	0.76	2.49	26.31	10.97	6.15	5.67	7.13	4.73	2.36	1.29	0.94
Ac-ft	4,060	4,380	14,370	151,500	63,200	35,410	32,680	41,090	27,270	13,560	7,410	5,410

Calendar year 1952: Max 4,000 Min 60 Mean 381 Cfsm 3.53 In. 47.98 Ac-ft 276,300
Water year 1952-53: Max 5,400 Min 60 Mean 553 Cfsm 5.12 In. 69.51 Ac-ft 400,300

Peak discharge (base, 3,000 cfs).--Jan. 9 (time unknown) 6,260 cfs (13.15 ft); Jan. 11 or 12 (time unknown) 5,400 cfs (12.3 ft); Jan. 18 or 19 (time unknown) 6,100 cfs (13.0 ft); Jan. 23 (8 a.m.) 3,860 cfs (10.60 ft); Jan. 31 (time unknown) 3,380 cfs (10.0 ft).
* Discharge measurement made on this day.

Panther Creek near Carson, Wash.

Location.--Lat 45°48'00", long. 121°52'00", in SW¼ sec. 25, T. 4 N., R. 7½ E., on left bank a third of a mile upstream from Cedar Creek and 6 miles north of Carson.

Drainage area.--30.1 sq mi.

Records available.--December 1944 to October 1953 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 800 ft (from topographic map).

Average discharge.--8 years (1945-53), 186 cfs.

Extremes.--Maximum discharge during year, 2,400 cfs Jan. 9 (gage height, 5.18 ft); minimum, 52 cfs Nov. 26 to Dec. 1 (gage height, 0.93 ft).
1944-53: Maximum discharge, that of Jan. 9, 1953; minimum, 47 cfs Aug. 31 to Sept. 2, 1945.
A discharge of 40 cfs was measured Oct. 30, 1944.

Remarks.--Records good. No diversion or regulation.

Rating table, Oct. 1, 1952, to Oct. 13, 1953 (gage height, in feet, and discharge, in cubic feet per second)

0.9	48	2.5	491
1.1	80	3.0	732
1.3	119	3.5	1,030
1.6	185	4.0	1,380
2.0	294	5.0	2,240

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	56	54	155	796	155	174	183	158	107	84	75
2	60	56	56	281	541	149	164	171	*149	105	84	75
3	60	56	63	*491	706	142	155	160	144	*103	84	73
4	58	56	99	343	620	136	147	158	138	103	82	72
5	58	56	93	255	509	134	142	167	136	101	84	72
6	58	56	84	204	496	130	138	174	140	99	86	70
7	*58	56	134	263	541	130	136	167	153	99	*82	70
8	58	56	125	932	473	134	134	158	149	97	82	70
9	58	54	103	1,770	377	147	127	147	144	95	80	68
10	57	57	125	771	314	155	123	138	138	95	80	68
11	57	58	150	932	263	171	125	132	136	95	80	66
12	57	60	341	1,130	238	204	132	127	136	93	78	*66
13	57	66	241	843	214	199	134	125	132	93	78	66
14	57	65	169	550	199	185	134	127	130	93	77	66
15	57	60	132	434	*195	185	130	127	127	93	77	66
16	57	*57	109	686	238	314	132	125	123	91	77	65
17	57	56	95	1,120	297	308	134	125	121	91	77	65
18	57	56	88	1,460	263	*257	134	136	119	91	75	65
19	57	56	82	1,350	235	241	142	153	121	91	75	65
20	57	56	78	990	217	230	160	147	121	91	75	63
21	56	56	82	743	197	232	176	155	119	90	73	63
22	56	54	101	696	190	294	178	183	115	90	73	63
23	56	54	101	914	176	369	*190	183	115	90	72	63
24	56	54	95	616	169	381	185	183	113	90	84	63
25	56	54	86	568	164	354	171	180	113	90	78	63
26	56	52	82	518	160	288	167	180	113	88	86	62
27	56	52	78	426	160	241	204	230	111	88	93	63
28	56	52	75	430	162	214	204	230	109	88	91	70
29	57	52	86	577	-	197	187	204	109	86	86	63
30	58	52	163	670	-	190	185	187	109	86	80	68
31	57	-	176	850	-	185	-	171	-	84	77	-
Total	1,775	1,681	3,546	21,968	9,110	6,649	4,644	5,033	3,841	2,896	2,490	2,007
Mean	57.3	56.0	114	709	325	214	155	162	128	93.4	80.3	66.9
Cfsm	1.90	1.86	3.79	23.6	10.8	7.11	5.15	5.38	4.25	3.10	2.67	2.22
In.	2.19	2.08	4.38	27.14	11.26	8.22	5.74	6.22	4.75	3.58	3.08	2.48
Ac-ft	3,520	3,330	7,030	43,570	18,070	13,190	9,210	9,980	7,620	5,740	4,940	3,980

Calendar year 1952: Max 1,540 Min 52 Mean 129 Cfsm 4.29 In. 58.20 Ac-ft 93,400
Water year 1952-53: Max 1,770 Min 52 Mean 180 Cfsm 5.98 In. 81.12 Ac-ft 130,200

Peak discharge (base, 1,000 cfs).--Jan. 9 (4 a.m.) 2,400 cfs (5.18 ft); Jan. 12 (3 to 4 a.m.) 1,280 cfs (3.86 ft); Jan. 18 (6:30 p.m.) 2,000 cfs (4.73 ft); Jan. 23 (4 a.m.) 1,040 cfs (3.52 ft); Jan. 31 (8 to 9 p.m.) 1,020 cfs (3.48 ft).
* Discharge measurement made on this day.

Discharge, in cubic feet per second, 1953

Day	Discharge	Day	Discharge
Oct. 1	80	Oct. 8	62
2	72	9	62
3	68	10	66
4	66	11	63
5	65	12	62
6	63	13	62
7	63		

Wind River near Carson, Wash.

Location.--Lat 45°44'10", long. 121°48'10", in SW¼NE¼ sec. 21, T. 3 N., R. 8 E., on right bank three-quarters of a mile upstream from Little Wind River, 1 mile northeast of Carson, and 2½ miles upstream from mouth. Records include flow of Little Wind River.

Drainage area.--225 sq mi, includes that of Little Wind River.

Records available.--December 1934 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 150 ft (from topographic map).

Average discharge.--18 years, 1,121 cfs.

Extremes.--Maximum discharge during year, 15,500 cfs Jan. 9 (gage height, 16.02 ft); minimum, 123 cfs Nov. 30 (gage height, 2.78 ft).
1934-53: Maximum discharge, 16,700 cfs Dec. 29, 1937 (gage height, 17.30 ft), from rating curve extended above 5,000 cfs on basis of velocity-area studies; minimum, that of Nov. 30, 1952.

Remarks.--Records good. Flow occasionally affected by pondage at Forest Service powerplant on Trout Creek. No diversion above station.

Revision.--WSP 964: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

2.7	122	5.0	660	9.0	3,290
2.9	149	5.5	860	10.0	4,380
3.2	195	6.0	1,100	12.0	7,170
3.6	269	6.5	1,370	14.0	10,900
4.0	359	7.0	1,670	16.0	15,600
4.5	491	8.0	2,400		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	162	149	131	1,040	6,260	935	1,240	1,560	1,150	550	288	288
2	161	143	146	1,920	4,560	884	1,160	1,430	*1,090	541	284	271
3	158	141	178	3,540	5,820	840	1,100	1,320	1,020	544	277	261
4	156	138	464	*2,460	5,220	812	1,040	1,320	965	*547	275	251
5	155	136	547	1,760	4,430	792	1,010	1,440	925	535	280	241
6	*154	135	402	1,410	4,380	764	990	1,580	990	535	290	238
7	150	135	616	1,960	4,490	752	945	1,560	1,240	526	284	232
8	149	134	684	6,500	3,840	784	925	1,510	1,200	535	*271	226
9	148	132	529	12,600	3,040	848	876	1,400	1,100	506	263	225
10	148	139	720	6,600	2,560	905	836	1,240	1,060	474	255	219
11	148	168	788	8,400	2,150	1,080	824	1,130	1,020	463	240	216
12	146	182	2,400	9,720	1,850	1,360	888	1,060	1,080	452	241	210
13	146	217	1,860	7,200	1,640	1,240	910	1,040	1,060	439	236	209
14	143	240	1,190	5,120	1,520	1,120	880	1,040	955	423	234	204
15	142	221	888	4,110	1,470	1,190	840	995	905	415	232	202
16	142	*187	716	6,210	*1,930	2,010	844	970	872	402	228	198
17	142	170	592	9,540	2,450	1,870	876	975	848	392	228	195
18	141	160	523	12,100	1,990	1,630	880	1,060	820	384	225	193
19	139	154	480	11,300	1,660	*1,600	970	1,340	796	374	219	193
20	141	148	441	8,190	1,500	1,530	1,140	1,280	836	364	217	189
21	141	143	444	6,380	1,380	1,620	1,270	1,350	776	357	217	187
22	141	139	660	6,020	1,270	2,140	1,320	1,560	728	345	214	185
23	141	139	624	8,000	1,180	2,710	*1,530	1,460	696	340	212	185
24	142	134	538	6,320	1,120	2,660	1,540	1,450	668	335	236	184
25	141	132	477	5,160	1,040	2,530	1,390	1,330	644	324	265	182
26	138	130	439	4,420	990	2,050	1,410	1,280	624	319	319	181
27	159	128	420	3,730	985	1,730	2,010	1,730	606	314	526	181
28	134	130	402	3,780	980	1,560	2,070	1,630	606	308	436	221
29	141	127	460	4,440	-	1,430	1,770	1,500	592	303	387	207
30	148	126	1,020	4,880	-	1,420	1,690	1,380	568	297	330	217
31	150	-	1,120	6,240	-	1,370	-	1,240	-	292	326	-
Total	4,547	4,557	20,899	181,050	71,705	44,166	35,174	41,160	26,440	12,935	8,535	6,391
Mean	147	152	674	5,840	2,561	1,425	1,172	1,328	881	417	275	213
Cfsm	0.653	0.676	3.00	26.0	11.4	6.33	5.21	5.90	3.92	1.85	1.22	0.947
In.	0.75	0.75	3.45	29.93	11.85	7.30	5.81	6.80	4.37	2.14	1.41	1.06
Ac-ft	9,020	9,040	41,450	359,100	142,200	87,600	69,770	81,640	52,440	25,660	16,930	12,680

Calendar year 1952: Max 11,300 Min 126 Mean 874 Cfsm 3.88 In. 52.89 Ac-ft 634,600
Water year 1952-53: Max 12,600 Min 126 Mean 1,254 Cfsm 5.57 In. 75.62 Ac-ft 907,500

Peak discharge (base, 5,700 cfs).--Jan. 9 (6 a.m.) 15,500 cfs (16.02 ft); Jan. 12 (4 a.m.) 11,000 cfs (14.14 ft); Jan. 18 (6 p.m.) 15,300 cfs (15.94 ft); Jan. 23 (3:30 a.m.) 9,150 cfs (13.19 ft); Jan. 31 (10:30 p.m.) 7,770 cfs (12.43 ft); Feb. 3 (12 m. to 1 p.m.) 6,300 cfs (11.51 ft).
* Discharge measurement made on this day.

Salmon River near Government Camp, Oreg.

Location.--Lat 45°16'00", long. 121°43'00", in sec. 31, T. 3 S., R. 9 E., on right bank near lower end of Red Top Meadows, 4 miles southeast of Government Camp.

Drainage area.--8.7 sq mi, approximately.

Records available.--May 1910 to May 1912, April 1926 to September 1953. Published as "near Rowe" 1910-12.

Gage.--Water-stage recorder. Datum of gage is 3,446.45 ft above mean sea level, datum of 1929. Prior to Nov. 21, 1910, staff gage at site a quarter of a mile upstream at different datum. Nov. 21, 1910, to May 31, 1912, and Apr. 21, 1926, to Sept. 30, 1933, water-stage recorder at site 75 ft upstream from former site at different datum.

Average discharge.--28 years (1910-11, 1926-53), 42.5 cfs.

Extremes.--Maximum discharge during year, 408 cfs Jan. 18 (gage height, 2.77 ft); minimum, 10 cfs Nov. 27.
1910-12, 1926-53: Maximum discharge, 650 cfs Dec. 22, 1933 (gage height, 3.61 ft); minimum, that of Nov. 27, 1952.

Remarks.--Records good. No diversion or regulation above station.

Revisions.--WSP 769: Drainage area.

Rating table, water year 1952-53, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

0.1	8.0	1.5	135
.3	17	2.0	225
.6	33	2.6	365
1.0	68		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	18	12	14	123	35	31	55	97	61	36	28
2	18	16	12	26	97	33	31	54	93	62	36	28
3	18	15	12	28	172	32	34	64	86	61	35	26
4	18	15	16	20	111	32	34	85	85	60	35	26
5	18	14	*15	19	110	32	35	107	85	60	44	26
6	18	14	15	17	168	32	33	100	110	61	41	26
7	18	14	15	17	148	34	31	95	114	62	36	26
8	18	14	14	37	111	36	30	80	92	66	35	25
9	18	14	14	109	85	39	*29	69	87	*58	34	24
10	18	14	17	41	73	41	29	62	88	57	33	25
11	18	18	25	101	65	37	29	62	96	56	32	25
12	18	19	31	*101	59	35	29	65	101	55	32	25
13	18	18	22	79	54	32	28	69	97	55	32	24
14	18	16	18	50	52	32	28	73	93	54	31	24
15	18	14	16	42	50	31	28	69	93	52	31	24
16	18	14	16	107	49	31	29	70	91	51	31	24
17	17	13	14	234	47	30	33	75	93	49	30	23
18	17	14	14	352	44	29	37	93	86	49	29	23
19	17	14	14	181	42	29	48	111	88	47	29	24
20	18	14	12	136	41	29	56	91	88	46	31	22
21	18	13	12	91	39	28	62	*88	79	46	30	21
22	*17	12	12	101	39	31	61	75	75	45	29	21
23	16	12	13	142	38	39	69	73	73	44	29	22
24	18	12	13	86	37	42	68	70	72	44	32	22
25	16	b11	12	72	36	39	72	68	70	43	31	22
26	16	b11	12	59	36	34	79	126	67	42	34	21
27	16	b11	12	51	*37	36	108	144	65	41	31	22
28	14	b12	12	53	38	36	91	112	68	39	*32	31
29	15	b12	16	78	-	34	70	122	62	39	31	22
30	16	b12	18	89	-	34	61	110	62	39	29	24
31	18	-	15	124	-	33	-	97	-	37	28	-
Total	538	420	471	2,657	2,001	1,047	1,403	2,634	2,556	1,581	1,009	726
Mean	17.4	14.0	15.2	85.7	71.5	33.8	46.8	85.0	85.2	51.0	32.5	24.2
Cfsm	2.00	1.61	1.75	9.85	8.22	3.89	5.38	9.77	9.79	5.86	3.74	2.78
In.	2.30	1.80	2.01	11.36	8.55	4.48	6.00	11.26	10.93	6.76	4.31	3.10
Ac-ft	1,070	833	934	5,270	3,970	2,080	2,780	5,220	5,070	3,140	2,000	1,440

Calendar year 1952: Max 152 Min 11 Mean 39.3 Cfsm 4.52 In. 61.52 Ac-ft 28,560
Water year 1952-53: Max 352 Min 11 Mean 46.7 Cfsm 5.37 In. 72.86 Ac-ft 33,810

Peak discharge (base, 150 cfs).--Jan. 9 (4 to 5 a.m.) 150 cfs (1.60 ft); Jan. 18 (3 p.m.) 408 cfs (2.77 ft); Jan. 22 (11 p.m.) 211 cfs (1.93 ft); Feb. 5 (12 p.m.) 237 cfs (2.06 ft); May 26 (11 p.m.) 219 cfs (1.97 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Sandy River near Marmot, Oreg.

Location.--Lat 45°23'10", long. 122°08'00", in NE¼ sec. 24, T. 2 S., R. 5 E., on right bank 1 mile southwest of Marmot, 1½ miles upstream from Sandy River Dam of Portland General Electric Co., and 6 miles (revised) downstream from Salmon River.

Drainage area.--262 sq mi.

Records available.--August 1911 to September 1953. Records for period January 1916 to June 1919, published as "at dam near Marmont," obtained by combining records for Sandy River below dam near Marmot with records for Sandy River Canal near Marmot.

Gage.--Water-stage recorder. Datum of gage is 742.4 ft above mean sea level (Portland General Electric Co.'s benchmark). Prior to Oct. 19, 1933, water-stage recorder (staff gage for short periods) at several sites ranging from 1¾ miles below to half a mile above present site at various datums.

Average discharge.--42 years, 1,331 cfs.

Extremes.--Maximum discharge during year, 19,600 cfs Jan. 18 (gage height, 14.21 ft); minimum, 195 cfs Nov. 27, 28 (gage height, 2.80 ft).

1911-53: Maximum discharge, 29,200 cfs Jan. 6, 1923 (gage height, 17.5 ft, site and datum then in use), by computation of peak flow over dam; minimum, that of Nov. 27, 28, 1952.

Revisions.--Figures of maximum discharge for the water years 1912 and 1934 have been revised to 14,800 cfs Jan. 13, 1912 (gage height, 9.25 ft, site and datum then in use) and 19,300 cfs Dec. 22, 1933 (gage height, 13.8 ft), superseding figures published in WSP 414 and 769, respectively.

Remarks.--Records excellent except those for period of no gage-height record, which are good. No diversion or regulation above station.

Cooperation.--Water-stage recorder inspected by employee of Portland General Electric Co.

Revisions.--WSP 594: Drainage area. Revised figures of discharge, in cubic feet per second, for periods in the water years 1915, 1922, and 1924, superseding those published in WSP 414, 554, and 594, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1915		1915-Con.		1922-Con.		1922-Con.	
Jan. 1	1,500	Jan. 10	1,250	July 14	600	July 28	450
2	1,200			15	580	29	450
3	1,050	1922		16	560	30	440
5	900	July 9	640	17	560	31	440
6	800	10	640	18	540		
7	900	11	640	19	540	1924	
8	1,800	12	620	21	520	Feb. 10	1,920
9	1,450	13	620	24	480		

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
January 1915.....	2,500	625	1,110	4.24	4.89	68,200
Water year 1914-15...	3,500	294	949	3.62	49.23	688,000
Calendar year 1915	12,500	294	1,210	4.62	62.47	874,000
July 1922.....	780	440	579	2.21	2.55	35,600
Water year 1921-22...	17,000	302	1,360	5.19	70.33	982,000
Calendar year 1922...	7,620	290	1,100	4.20	57.20	798,000
February 1924.....	5,280	1,400	2,330	8.89	9.59	134,000
Water year 1923-24...	7,410	267	1,040	3.97	54.25	758,000
Calendar year 1924...	7,200	267	1,140	4.35	59.31	828,000

Sandy River near Marmot, Oreg.--Continued

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
2.8	195	6.0	2,450	3.2	325	6.0	2,350
3.0	260	8.0	5,300	4.0	710	8.0	5,100
3.5	485	10.0	9,300	5.0	1,400	10.0	8,900
4.0	755	12.0	14,000				
5.0	1,470						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	284	304	264	719	6,190	1,090	1,390	1,700	2,070	854	520	432
2	276	264	256	1,770	4,620	1,020	1,270	1,600	1,900	848	530	428
3	268	242	256	2,000	8,020	974	1,210	1,550	1,710	854	535	410
4	264	239	288	1,430	5,840	948	1,170	1,750	1,600	824	525	396
5	264	236	328	*1,140	5,300	936	1,180	2,240	1,540	830	535	392
6	260	232	300	952	6,620	942	1,170	*2,400	1,790	842	638	401
7	260	232	440	1,130	5,610	968	1,100	2,170	2,470	878	580	410
8	264	228	430	2,080	4,500	1,180	1,080	2,010	2,180	910	535	*414
9	268	225	372	7,160	3,340	1,410	1,020	1,960	1,920	848	510	378
10	268	232	978	3,700	2,650	1,480	974	1,810	1,880	794	486	374
11	264	260	1,010	3,690	2,170	1,480	974	1,640	1,780	794	478	388
12	256	304	1,740	4,970	*1,870	1,410	1,080	1,610	1,840	818	486	419
13	256	386	1,120	4,950	1,660	1,270	1,020	1,610	1,770	806	468	401
14	246	318	779	3,810	1,560	1,160	974	1,660	1,590	824	468	383
15	246	272	629	2,910	1,440	1,160	968	1,600	*1,490	746	486	388
16	*246	260	535	7,000	1,800	1,360	1,050	1,540	1,400	694	486	374
17	253	242	470	12,000	2,530	1,320	1,210	1,550	1,320	677	468	353
18	256	239	430	*17,800	1,980	1,260	1,260	1,760	1,250	682	473	357
19	256	236	404	10,800	1,650	1,250	1,520	2,870	1,300	666	473	365
20	253	236	390	6,900	1,500	1,260	1,820	2,950	1,340	628	478	349
21	a250	232	390	5,100	1,360	1,320	2,030	2,600	1,190	616	450	341
22	a250	228	585	5,870	1,340	2,710	2,010	2,200	1,120	622	424	345
23	a260	225	585	*7,550	1,220	3,040	2,150	2,050	1,080	600	428	345
24	a270	225	470	4,420	1,150	2,950	2,050	2,160	1,040	580	486	337
25	a260	222	412	3,740	1,110	2,730	2,050	1,940	1,000	575	442	333
26	a250	*216	390	3,140	1,080	2,080	2,130	2,310	974	565	530	325
27	a250	210	376	2,480	1,090	1,780	2,830	4,230	936	*555	510	353
28	a250	207	376	2,830	1,160	1,660	2,700	3,250	936	550	482	500
29	256	236	695	4,160	-	1,500	2,180	2,850	916	555	486	396
30	276	300	958	4,830	-	1,560	1,920	2,670	884	545	432	392
31	276	-	809	6,280	-	1,580	-	2,300	-	525	424	-
Total	8,056	7,488	17,465	147,311	80,360	46,788	45,490	66,540	44,216	22,105	15,252	11,479
Mean	260	250	564	4,752	2,870	1,509	1,516	2,146	1,474	713	492	383
Cfsm	0.992	0.954	2.15	18.1	11.0	5.76	5.79	8.19	5.63	2.72	1.88	1.46
In.	1.14	1.06	2.48	20.91	11.41	6.64	6.46	9.45	6.28	3.14	2.16	1.63
Ac-ft	15,980	14,850	34,640	292,200	159,400	92,800	90,230	132,000	87,700	43,840	30,250	22,770

Calendar year 1952: Max 6,430 Min 207 Mean 974 Cfsm 3.72 In. 50.62 Ac-ft 707,300
Water year 1952-53: Max 17,800 Min 207 Mean 1,404 Cfsm 5.36 In. 72.76 Ac-ft 1,017,000

Peak discharge (base, 7,700 cfs).--Jan. 9 (6 a.m.) 9,520 cfs (10.1 ft); Jan. 18 (3:30 p.m.) 19,600 cfs (14.21 ft); Jan. 22 (11:30 p.m.) 11,500 cfs (11.13 ft); Jan. 31 (11 p.m.) 8,770 cfs (9.94 ft); Feb. 3 (1 p.m.) 9,310 cfs (10.18 ft); Feb. 5 (11 p.m.) 8,340 cfs (9.74 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on the basis of recorded range in stage and records for station below Bull Run River and Little Sandy River near Bull Run.

Lake Ben Morrow near Bull Run, Oreg.

Location.--Lat 45°29'00", long. 122°04'50", in SW¼ sec. 16, T. 1 S., R. 6 E., in control house at Bear Creek Dam of city of Portland, 8½ miles northeast of Bull Run.

Drainage area.--74 sq mi, approximately.

Records available.--October 1928 to September 1953.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Portland Water Bureau). Prior to Oct. 9, 1930, staff gage at same site and datum.

Extremes.--Maximum contents during year, 30,230 acre-ft Jan. 17 (elevation, 1,044.21 ft); minimum, 10,170 acre-ft Dec. 2 (elevation, 980.52 ft).
1928-53: Maximum contents, 31,600 acre-ft Mar. 31, 1931 (elevation, 1,047.40 ft); minimum after first filling, that of Dec. 2, 1952.

Remarks.--Records excellent. Lake Ben Morrow is formed by concrete dam known as Bear Creek Dam on Bull Run River, completed in March 1929 for water supply of city of Portland. Capacity of reservoir, 26,930 acre-ft at crest of spillway (elevation, 1,036 ft); dead storage, 213 acre-ft at elevation 890 ft (center of outlet valves).

Cooperation.--Water-stage recorder inspected and capacity table furnished by Portland Water Bureau.

Revisions (water years).--WSP 814: 1935(M).

Monthly elevation and contents, water year October 1952 to September 1953

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	1,003.83	16,100	-
Oct. 31	989.12	12,160	-3,940
Nov. 30	980.98	10,280	-1,880
Dec. 31	1,037.44	27,490	+17,210
Calendar year 1952	-	-	+140
Jan. 31	1,041.43	29,070	+1,580
Feb. 28	1,036.90	27,280	-1,790
Mar. 31	1,037.41	27,480	+200
Apr. 30	1,037.72	27,600	+120
May 31	1,037.45	27,500	-100
June 30	1,037.46	27,500	0
July 31	1,031.15	25,110	-2,390
Aug. 31	1,020.99	21,520	-3,590
Sept.30	1,010.31	18,050	-3,470
Water year 1952-53	-	-	+1,950

† Elevation at 12 p.m.

Bull Run River below Lake Ben Morrow, Oreg.

Location.--Lat 45°29'00", long. 122°04'50", in SW¼ sec. 16, T. 1 S., R. 6 E., in gatehouse at Bear Creek Dam on Bull Run River, 500 ft downstream from Bear Creek, 1,000 ft upstream from Fivemile Creek, and 8½ miles northeast of Bull Run.
Drainage area.--74 sq mi, approximately.
Records available.--October 1929 to September 1953. Published as "below Bull Run Reservoir near Bull Run" in 1930 and as "below Bull Run Reservoir" in 1931-37.
Gage.--Water-stage recorder above crest of spillway, and scales indicating number of turns outlet needle valves are open. Datum of gage is at mean sea level (levels by Portland Water Bureau). Prior to Oct. 1, 1934, at site half a mile downstream at different datum.
Average discharge.--24 years, 578 cfs (adjusted for storage).
Extremes.--Maximum discharge during year, 9,440 cfs Jan. 17 (elevation, 1,044.21 ft); no flow Dec. 11-13.
1929-53: Maximum discharge at dam, 16,100 cfs Mar. 31, 1931 (elevation, 1,047.40 ft with one valve open 30 turns, present datum); no flow Oct. 2, 1951, Dec. 11-13, 1952.
Remarks.--Records good. Daily discharge determined by combining discharge through valves near base of dam and discharge over crest of spillway (elevation, 1,036 ft). Leakage at dam is less than 1 cfs and is disregarded. Flow regulated by Bull Run Lake and Lake Ben Morrow (see preceding page). Flow from Bull Run Lake is not artificially regulated but reaches river through surface and underground channels.
Cooperation.--Water-stage recorder inspected and record of valve openings furnished by Portland Water Bureau.
Revisions (water years).--WSP 904: Drainage area, 1931(M). Revised figures of discharge, in cubic feet per second, for a period in the water year 1937, superseding those published in WSP 834, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1937		1937-Con.		1937-Con.	
Jan. 4	240	Jan. 18	205	Jan. 26	125
5	250	19	170	27	120
6	200	20	150	28	110
8	169	22	130	29	105
9	170	23	135	30	105
10	160	24	135	31	100
17	192	25	125		

Month	Observed				Change in contents of Lake Ben Morrow (acre-feet)	Adjusted for change in contents			
	Maximum	Minimum	Mean	Runoff in acre-feet		Mean	Per square mile	Runoff in inches	Runoff in acre-feet
January 1937.....	255	100	163	10,050	-190	160	2.16	2.50	9,860
Water year 1936-37..	4,170	49	498	360,400	+2,400	501	6.77	91.91	362,800
Calendar year 1937..	6,290	88	677	490,500	+820	679	9.18	124.48	491,300

Bull Run River below Lake Ben Morrow, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	141	104	100	600	3,260	304	571	800	614	215	183	110
2	138	104	92	1,390	2,060	282	470	732	542	*235	183	113
3	143	104	86	1,780	4,390	255	425	648	480	202	179	126
4	147	104	73	1,140	2,740	258	377	648	432	194	164	145
5	147	107	65	792	2,410	255	360	718	395	219	160	148
6	145	103	72	620	3,100	255	348	728	510	177	167	148
7	151	108	69	693	2,510	255	321	768	1,030	205	145	148
8	154	105	50	1,400	1,780	304	302	840	1,050	177	143	148
9	147	103	54	4,250	1,190	395	282	848	1,000	167	143	151
10	138	103	25	2,220	882	44	266	746	900	179	164	*148
11	130	103	0	2,600	700	565	250	634	700	177	198	148
12	126	101	0	3,030	588	648	260	568	650	162	202	146
13	126	83	0	2,770	496	536	277	545	550	155	199	146
14	126	83	357	2,030	458	438	277	522	250	146	199	151
15	128	86	548	1,630	444	413	280	516	160	157	199	155
16	131	96	438	4,630	669	683	282	484	655	195	179	158
17	133	98	352	7,500	1,320	690	338	458	450	203	184	155
18	130	96	288	8,040	911	565	365	529	204	201	197	154
19	123	103	250	4,920	676	542	470	976	280	187	200	154
20	*132	107	230	3,060	555	510	581	1,000	480	192	175	154
21	129	111	200	2,160	484	542	648	942	550	*210	160	152
22	126	111	272	2,550	425	1,330	651	874	360	210	166	152
23	123	107	316	3,780	401	1,690	1,020	760	320	195	157	144
24	115	102	258	1,820	371	1,280	1,050	891	380	187	130	133
25	110	106	200	1,720	351	1,230	848	792	320	185	119	133
26	118	110	174	1,380	326	848	792	792	320	185	*105	128
27	117	102	156	1,020	310	662	1,180	1,700	320	185	88	123
28	114	*102	160	1,150	310	581	1,310	1,250	282	*195	101	123
29	115	102	484	2,470	-	529	982	942	340	214	110	123
30	109	102	891	3,060	-	574	891	848	340	205	110	123
31	104	-	721	3,810	-	718	-	732	-	192	110	-
Total	4,016	3,056	6,981	80,025	34,117	18,581	16,454	24,231	14,864	5,908	4,919	4,240
Mean	130	102	225	2,581	1,218	599	548	782	495	191	159	141
Ac-ft	7,970	6,060	13,850	158,700	67,670	36,850	32,640	48,060	29,480	11,720	9,760	8,410

Adjusted for change in contents of Lake Ben Morrow

Mean	65.5	70.2	505	2,607	1,186	603	551	780	495	152	100	83.0
Cfsm	0.885	0.949	6.82	35.2	16.0	8.15	7.45	10.5	6.69	2.05	1.35	1.12
In.	1.02	1.06	7.87	40.61	16.69	9.39	8.30	12.15	7.47	2.36	1.56	1.25
Ac-ft	4,030	4,180	31,060	160,300	65,880	37,050	32,760	47,960	29,480	9,330	6,170	4,940

Observed

Calendar year 1952: Max 4,440 Min 0 Mean 400 Ac-ft 290,300
Water year 1952-53: Max 8,040 Min 0 Mean 596 Ac-ft 431,200

Adjusted

Calendar year 1952: Mean 400 Cfsm 5.41 In. 73.60 Ac-ft 290,400
Water year 1952-53: Mean 598 Cfsm 8.08 In. 109.73 Ac-ft 433,200

Peak discharge (base, 4,800 cfs).--Jan. 9 (7 a.m.) 5,500 cfs (1,041.77 ft); Jan. 17 (11 p.m.) 9,440 cfs (1,044.21 ft); Jan. 23 (1 a.m.) 5,660 cfs (1,041.88 ft); Jan. 31 (10 p.m.) 5,130 cfs (1,041.51 ft); Feb. 3 (11 a.m.) 5,330 cfs (1,041.65 ft).

* Discharge measurement made on this day.

Note.--June 9-17, 19-27, discharge through valves at higher flows than have been rated; discharge estimated on basis of records for station near Bull Run.

Bull Run River near Bull Run, Oreg.

Location.--Lat 45°27'20", long. 122°07'50", in SE¼ sec. 25, T. 1 S., R. 5 E., on left bank 1 mile (revised) upstream from intake of pipeline for water supply of city of Portland, and 5 miles east of Bull Run.

Drainage area.--102 sq mi.

Records available.--January 1895 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 760 ft (levels by city of Portland). Prior to July 27, 1909, staff gage 1 mile downstream at different datum. July 27, 1909, to July 25, 1916, water-stage recorder at present site at datum 1.0 ft lower; July 26, 1916, to July 21, 1924, at datum 1.0 ft higher; July 22, 1924, to Aug. 24, 1928, at datum 0.5 ft higher. Supplementary staff gage 1 mile downstream on headwall of intake works is read in general 3 times a day (every half hour during floods) by employees of Portland Water Bureau.

Average discharge.--46 years (1907-53), 741 cfs (adjusted for storage since 1929).

Extremes.--Maximum discharge during year, 11,100 cfs Jan. 17 (gage height, 9.53 ft); minimum, 107 cfs Dec. 5.
1895-1953: Maximum discharge, 20,600 cfs Mar. 31, 1931 (gage height, 13.8 ft), by computation of peak flow over dam; minimum, 63 cfs Aug. 13-16, 1926.

Remarks.--Records excellent. Flow regulated by Bull Run Lake and Lake Ben Morrow (see p.). Flow from Bull Run Lake is not artificially regulated, but reaches river through surface and underground channels. No diversions above station. Records of water temperatures for the water year 1953 are given in WSP 1293.

Cooperation.--Water-stage recorder inspected by employees of Portland Water Bureau.

Revisions.--Revised figures of discharge, in cubic feet per second, for periods in water years 1910-11, 1913, 1920-23, 1926, and 1929, superseding those published in WSP 370, 312, 362, 514, 534, 554, 574, 634, and 694, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1910		1921		1922-Con.	
Feb. 13	1,390	May 22	940	May 11	850
14	934	23	892	12	1,000
15	652	24	900	Nov. 1	790
16	586	26	788		
Dec. 14	520	27	658	1925	
15	472	28	578	Dec. 31	430
16	448	29	550		
				1928	
1913		1922		Dec. 11	1,530
Jan. 1	2,300	May 7	1,200		
		8	1,000		
1919		9	900		
Dec. 21	2,980	10	880		

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
February 1910	4,270	400	1,010	9.90	10.31	56,100
Water year 1909-10	9,490	72	867	8.50	115.38	628,000
December 1910	2,120	328	982	9.63	11.10	60,400
Calendar year 1910	9,490	72	750	7.35	99.73	543,000
Water year 1910-11	5,080	80	640	6.27	85.10	463,000
January 1913	4,610	489	1,230	12.1	13.95	75,600
Water year 1912-13	5,980	107	842	8.25	112.19	610,000
Calendar year 1913	5,980	107	750	7.35	99.98	543,000
December 1919	3,340	250	1,130	11.1	12.80	69,500
Calendar year 1919	8,240	70	786	7.71	104.85	569,000
Water year 1919-20	9,890	91	771	7.56	103.24	560,000
May 1921	1,390	548	910	8.92	10.28	56,000
Water year 1920-21	11,400	85	977	9.58	129.94	707,000
Calendar year 1921	14,500	85	1,040	10.2	138.21	752,000
May 1922	2,550	850	1,460	14.3	16.49	89,800
Water year 1921-22	14,500	90	758	7.43	100.73	548,000
November 1922	2,160	202	488	4.78	5.33	29,000
Calendar year 1922	7,900	90	603	5.91	80.15	436,000
Water year 1922-23	17,200	95	780	7.65	103.74	565,000
December 1925	5,840	430	1,190	11.7	13.49	73,200
Calendar year 1925	5,840	64	717	7.03	95.47	520,000
Water year 1925-26	7,090	63	540	5.29	71.88	391,000
December 1928	2,190	269	758	7.43	8.57	46,600
Calendar year 1928	5,910	83	678	6.65	90.43	492,000
Water year 1928-29	2,510	83	588	5.76	78.29	426,000

Bull Run River near Bull Run, Oreg.--Continued

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.5	107	3.0	1,090
1.0	205	4.0	1,950
1.5	350	6.0	4,470
2.0	525	9.0	10,000
2.5	760		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	150	121	124	778	3,860	420	*784	1,030	790	257	203	138
2	146	119	128	1,680	2,480	399	*685	929	690	278	203	136
3	152	119	122	2,140	5,230	374	605	826	605	281	200	150
4	155	119	135	1,400	3,410	344	557	820	549	257	187	167
5	153	117	126	1,020	3,140	374	549	*887	522	284	178	176
6	153	117	117	766	3,830	368	549	915	690	234	178	174
7	157	122	174	*868	3,110	364	504	868	1,400	269	167	174
8	163	129	150	1,640	2,210	424	483	943	1,370	228	167	172
9	155	124	133	5,010	1,460	522	455	964	1,240	205	169	167
10	148	126	344	2,660	1,120	589	441	814	1,180	223	180	*172
11	138	129	385	3,100	887	736	420	700	868	221	218	174
12	133	133	494	3,550	730	814	455	636	820	210	226	174
13	131	129	308	3,300	*623	675	476	597	695	196	226	172
14	131	117	524	2,490	585	569	462	601	338	191	223	174
15	131	117	675	1,960	569	577	452	577	189	187	223	178
16	138	117	525	5,590	836	943	462	549	*824	213	203	178
17	142	122	444	8,860	1,680	915	533	518	571	221	203	176
18	140	119	406	9,580	1,200	778	561	585	278	226	218	176
19	129	122	335	5,870	887	742	646	1,120	344	210	218	176
20	*137	126	308	3,830	748	712	784	1,190	569	218	200	176
21	137	135	302	2,660	636	766	850	1,120	679	240	184	174
22	131	135	430	3,110	597	1,980	820	1,030	458	226	194	174
23	133	133	452	4,360	541	2,210	1,240	922	382	216	184	167
24	122	122	399	2,180	511	1,750	1,230	1,100	472	200	172	155
25	116	126	344	2,120	480	1,690	1,010	943	388	200	153	153
26	124	131	308	1,700	444	1,200	950	957	388	198	174	150
27	128	122	281	1,280	430	943	1,430	2,160	392	198	140	144
28	122	*121	269	1,520	448	844	1,590	1,570	347	*200	140	178
29	128	121	623	3,060	-	730	1,200	1,210	364	218	153	157
30	131	122	1,120	3,770	-	826	1,120	1,090	360	221	144	172
31	121	-	908	4,470	-	1,010	-	943	-	210	140	-
Total	4,275	3,712	11,393	96,322	42,682	25,588	22,303	29,114	18,762	6,936	5,768	5,006
Mean	138	124	368	3,107	1,524	825	743	939	625	224	186	167
Ac-ft	8,480	7,360	22,600	191,100	84,660	50,750	44,240	57,750	37,210	13,760	11,440	9,930

Adjusted for change in contents of Lake Ben Morrow

Mean	73.8	92.1	647	3,134	1,492	829	745	938	625	185	128	109
Cfsm	0.724	0.903	6.34	30.7	14.6	8.13	7.30	9.20	6.13	1.81	1.25	1.07
In.	0.83	1.01	7.32	35.42	15.23	9.37	8.15	10.60	6.84	2.09	1.44	1.19
Ac-ft	4,540	5,480	39,810	192,700	82,870	50,950	44,360	57,650	37,210	11,370	7,850	6,460

Observed

Calendar year 1952:	Max	5,550	Min	116	Mean	510	Ac-ft	370,200
Water year 1952-53:	Max	9,580	Min	116	Mean	745	Ac-ft	539,300

Adjusted

Calendar year 1952:	Mean	510	Cfsm	5.00	In.	67.77	Ac-ft	370,300
Water year 1952-53:	Mean	748	Cfsm	7.33	In.	99.49	Ac-ft	541,200

Peak discharge (base, 5,400 cfs).--Jan. 9 (7 a.m.) 6,370 cfs (7.16 ft); Jan. 17 (11 p.m.) 11,100 cfs (9.53 ft); Jan. 23 (1 a.m.) 6,490 cfs (7.23 ft); Jan. 31 (10 p.m.) 5,970 cfs (6.93 ft); Feb. 3 (10 a.m.) 6,280 cfs (7.11 ft).

* Discharge measurement made on this day.

Little Sandy River near Bull Run, Oreg.

Location.--Lat 45°25'00", long. 122°10'20", in NE¼ sec. 10, T. 2 S., R. 5 E., on right bank three-eighths of a mile upstream from Portland General Electric Co.'s dam and tunnel from Sandy River and 3 miles east of Bull Run.

Drainage area.--22.3 sq mi (revised).

Records available.--May 1911 to April 1913 (fragmentary), July 1919 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 710.51 ft above mean sea level, adjustment of 1924 (levels by Portland General Electric Co.). May 23, 1911, to Apr. 29, 1913, staff gage at site seven-eighths of a mile downstream at different datum. July 1, 1919, to Sept. 30, 1931, water-stage recorder at datum 0.28 ft higher.

Average discharge.--34 years (1919-53), 140 cfs.

Extremes.--Maximum discharge during year, 2,820 cfs Jan. 17 (gage height, 6.86 ft); minimum, 11 cfs Oct. 5-9, 12-20.

1911-13, 1919-53: Maximum discharge, 5,320 cfs (revised) Nov. 20, 1921 (gage height, 9.18 ft, present datum), from rating curve extended above 2,200 cfs by logarithmic plotting; minimum, 8 cfs Aug. 20, Sept. 16, 17, 1940.

Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)
514	1920	Nov. 4, 1919	2,960	7.3
534	1921	Dec. 30, 1920	2,840	7.2
554	1922	Nov. 20, 1921	5,320	9.18
574	1923	Jan. 6, 1923	4,830	8.6
724	1931	Mar. 31, 1931	4,510	8.4

Remarks.--Records good. No diversion or regulation above station.

Cooperation.--Water-stage recorder graph furnished by Portland General Electric Co.

Revisions (water years).--WSP 1154: 1949. Revised figures of discharge for periods in the water years 1912, 1922-23, 1931, and 1945, superseding those published in WSP 362-C, 554, 574, 724, and 1044, are given herewith:

Date	Discharge (cfs)	Date	Discharge (cfs)	Date	Discharge (cfs)
1912		1912-Con.		1923	
Sept. 2	170	Sept.10	45	June 9	100
3	130	11	30		
4	100			1931	
5	60	1921		Mar. 31	3,500
6	50	Nov. 20	3,260		
7	90	21	2,890	1945	
8	110	30	1,660	Sept.21	79
9	70				

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
September 1912.....	2,417	300	28	80.6	-	-	4,800
November 1921.....	13,692	3,260	34	456	20.4	22.76	27,100
Calendar year 1921	73,552	3,260	16	202	9.06	122.53	145,800
Water year 1921-22	55,900	3,260	16	153	6.86	94.15	111,000
June 1923.....	3,285	197	54	110	4.93	5.50	6,550
Water year 1922-23	54,771	2,970	12	150	6.73	91.29	109,000
Calendar year 1923	52,273	2,970	12	143	6.41	87.12	104,000
March 1931.....	9,415	3,500	75	304	13.6	15.68	18,700
Water year 1930-31	39,342	3,500	10	108	4.75	65.59	78,000
Calendar year 1931	42,021	3,500	10	115	5.16	70.02	83,300
September 1945.....	1,303	107	13	43.4	1.95	2.17	2,580
Water year 1944-45	47,561	943	13	130	5.83	79.31	94,330
Calendar year 1945	60,644	2,470	13	166	7.44	101.13	120,300

Note.--Monthly values for September 1912 include the discharge at Little Sandy flume, which diverted water past station at that time.

Little Sandy River near Bull Run, Oreg.--Continued

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
1.8	8.0	3.5	275	1.9	14	3.0	132
2.0	16	4.0	470	2.1	23	3.5	265
2.3	36	5.0	1,070	2.3	36	4.0	445
2.6	69	6.3	2,220	2.6	66	5.0	1,030
3.0	140						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	26	16	136	666	87	*170	173	196	56	21	25
2	12	19	21	433	472	82	146	156	168	53	21	24
3	12	16	24	385	995	81	132	156	139	50	21	22
4	12	15	32	245	632	84	119	178	122	48	21	21
5	12	14	44	182	685	82	119	203	113	45	21	20
6	11	14	32	142	794	80	115	*190	188	42	27	20
7	11	14	53	176	608	80	102	175	385	40	24	20
8	11	14	50	*376	417	92	97	183	312	39	22	20
9	12	13	41	979	295	117	93	180	235	37	20	19
10	12	15	227	525	235	134	88	154	193	35	20	18
11	12	21	280	606	193	156	90	130	158	34	20	18
12	12	28	401	632	*158	151	97	128	154	33	18	18
13	11	34	221	615	134	124	92	122	161	32	18	18
14	11	28	138	480	130	104	92	144	124	35	18	*17
15	11	25	99	377	119	111	98	128	*109	34	18	17
16	*11	19	80	872	210	183	109	122	98	32	18	17
17	11	17	64	1,450	320	158	137	111	88	30	18	16
18	11	16	55	*2,130	250	144	142	165	81	29	17	16
19	11	15	49	1,030	196	142	168	309	107	28	17	16
20	11	15	45	752	168	144	193	292	119	28	18	16
21	13	15	47	525	144	139	198	253	97	27	18	16
22	13	15	91	675	137	464	188	203	84	27	18	16
23	13	14	99	735	117	481	232	203	80	27	20	16
24	17	14	76	401	111	409	218	250	77	25	34	16
25	15	14	60	351	102	389	198	198	73	25	31	16
26	13	*14	53	298	95	286	206	239	70	24	57	16
27	13	13	49	253	93	232	340	525	66	*23	43	20
28	13	13	46	353	97	209	277	337	66	22	35	51
29	16	14	168	580	-	178	218	280	66	22	41	28
30	25	13	207	774	-	213	201	289	60	22	30	35
31	23	-	155	806	-	212	-	238	-	22	27	-
Total	404	517	3,023	18,274	8,573	5,548	4,675	6,414	3,989	1,026	752	608
Mean	13.0	17.2	97.5	589	306	179	156	207	133	33.1	24.3	20.3
Cfsm	0.583	0.771	4.37	26.4	13.7	8.03	7.00	9.28	5.96	1.48	1.09	0.910
In.	0.67	0.86	5.04	30.48	14.30	9.25	7.80	10.70	6.65	1.71	1.25	1.01
Ac-ft	801	1,030	6,000	36,250	17,000	11,000	9,270	12,720	7,910	2,040	1,490	1,210

Calendar year 1952: Max 948 Min 11 Mean 104 Cfsm 4.66 In. 63.39 Ac-ft 75,400
Water year 1952-53: Max 2,130 Min 11 Mean 147 Cfsm 6.59 In. 89.72 Ac-ft 106,700

Peak discharge (base, 1,400 cfs).--Jan. 9 (5 a.m.) 1,420 cfs (5.45 ft); Jan. 17 (11 p.m.) 2,820 cfs (6.86 ft); Feb. 5 (11 p.m.) 1,570 cfs (5.64 ft).

* Discharge measurement made on this day.

Bull Run River at Bull Run, Oreg.

Location (revised).--Lat 45°26'00", long. 122°14'05", in NE¼ sec. 6, T. 2 S., R. 5 E., on left bank at Bull Run, 450 ft downstream from tailrace of Portland General Electric Co.'s powerplant, 1.5 miles downstream from Little Sandy River, and 1.5 miles above mouth.

Drainage area.--136 sq mi.

Records available.--August 1949 to September 1953.

Gage.--Water-stage and water-temperature recorder. Altitude of gage is 310 ft (by barometer).

Extremes.--Maximum discharge during year, 13,000 cfs Jan. 17 (gage height, 13.91 ft); minimum, 9.0 cfs Oct. 20; minimum daily, 12 cfs Oct. 18, 19.

1949-53: Maximum discharge, that of Jan. 17, 1953; minimum, 9.0 cfs Sept. 24, 1951, Oct. 20, 1952; minimum daily, 10 cfs Sept. 23, 1951.

Revisions.--The minimum discharge for the water year 1950 has been revised to 23 cfs Aug. 18, 1950 (gage height, 0.77 ft), superseding figure published in WSP 1184.

Remarks.--Records good. About 85,000 acre-ft diverted annually above station by Portland Water Bureau. Low and medium flows largely regulated by Portland General Electric Co.'s powerplant but only slight regulation at extreme high flows. Water which passes through the powerplant is diverted from Sandy and Little Sandy Rivers.

Revisions (water years).--WSP 1248: 1950(M). Revised figures of discharge, in cubic feet per second, for low-water period in the water year 1950, superseding those published in WSP 1184, are given herewith:

Sept. 10, 1950..... 44
Sept. 17, 1950..... 62

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
September 1950.....	13,927	833	44	464	27,620
Water year 1949-50.....	564,120	9,210	44	1,546	1,119,000
Calendar year 1950.....	626,592	9,210	44	1,717	1,243,000

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17						Jan. 18 to Sept. 30			
0.4	12	2.5	132	6.0	1,440	1.1	33	5.0	780
.6	17	3.0	188	7.0	2,300	1.5	50	6.0	1,410
1.0	32	3.5	280	9.0	4,600	2.0	80	7.0	2,240
1.5	56	4.0	430	11.0	7,600	2.5	120	9.0	4,500
2.0	89	5.0	850	13.0	11,200	3.0	178	11.0	7,600
						3.5	265	13.0	11,200
						4.0	390		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	440	82	*295	1,520	4,710	1,010	1,610	1,780	1,520	762	352	427
2	430	15	294	2,680	3,370	1,010	1,400	1,640	1,360	762	292	452
3	330	400	281	3,120	6,240	950	*1,320	1,390	1,240	778	466	491
4	13	405	384	2,190	4,290	892	1,280	1,510	1,140	726	563	499
5	15	396	426	1,830	3,900	1,000	1,240	*1,600	1,130	748	618	418
6	427	384	328	*1,470	4,800	922	1,180	1,630	1,370	684	477	384
7	417	301	546	1,650	4,070	958	1,180	1,560	2,210	610	572	74
8	396	30	564	2,580	3,100	982	1,120	1,670	2,110	654	618	494
9	401	22	461	6,060	2,390	1,200	1,060	1,670	2,010	237	426	442
10	420	375	1,160	3,650	1,960	1,280	1,080	1,460	1,820	74	563	492
11	30	386	1,170	3,960	1,730	1,470	1,040	1,350	1,540	70	530	443
12	19	428	1,410	4,570	1,470	1,550	1,090	1,290	1,470	68	560	467
13	450	574	1,030	4,260	*1,340	1,380	1,080	1,180	1,410	71	509	56
14	408	446	1,090	3,400	1,330	1,290	1,050	1,280	954	79	426	*388
15	404	25	1,340	2,840	1,220	1,250	1,040	1,200	742	70	442	408
16	363	14	1,100	6,500	1,670	1,720	1,110	1,180	*1,340	61	140	398
17	*243	416	912	9,760	2,560	1,640	1,200	1,100	1,200	66	500	368
18	12	330	788	*11,100	2,120	1,510	1,250	1,200	776	54	492	328
19	12	314	688	*7,220	1,770	1,500	1,300	1,860	922	67	529	328
20	359	102	679	3,150	1,600	1,470	1,470	1,960	1,190	67	540	*253
21	340	184	624	3,550	1,410	1,510	1,610	1,840	1,270	74	530	346
22	371	242	1,110	4,220	1,310	2,860	1,590	1,790	1,050	59	410	346
23	438	230	1,040	5,480	1,270	3,290	1,950	1,690	908	73	36	366
24	464	247	888	3,150	1,180	2,710	2,000	1,840	1,000	58	601	344
25	43	236	702	3,020	1,110	2,610	1,800	1,690	957	60	554	333
26	16	240	664	2,670	1,070	2,100	1,640	1,710	872	61	702	318
27	436	204	643	2,170	1,050	1,670	2,150	2,970	938	382	636	248
28	364	236	596	2,330	1,100	1,710	2,340	2,420	838	*146	568	587
29	446	172	1,390	3,860	-	1,590	1,970	2,070	878	176	554	399
30	470	250	1,890	4,740	-	1,700	1,910	1,970	856	252	54	536
31	400	-	1,660	5,370	-	1,810	-	1,700	-	438	488	-
Total	9,377	7,688	26,153	124,070	65,140	48,544	43,060	51,200	37,021	8,487	14,748	11,433
Mean	302	256	844	4,002	2,326	1,566	1,435	1,652	1,234	274	476	381
Ac-ft	18,600	15,250	51,870	246,100	129,200	96,290	85,410	101,600	73,430	16,830	29,250	22,680

Calendar year 1952: Max 6,550 Min 12 Mean 978 Ac-ft 709,900
Water year 1952-53: Max 11,100 Min 12 Mean 1,224 Ac-ft 886,500

* Discharge measurement made on this day.

Sandy River below Bull Run River, near Bull Run, Oreg.

Location.--Lat 45°27'20", long. 122°15'00" (revised), in NW¼ sec. 30, T. 1 S., R. 5 E., on left bank 1 mile downstream from Bull Run River and 2 miles northwest of Bull Run.

Drainage area.--440 sq mi.

Records available.--April 1910 to September 1914, October 1929 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 200 ft, revised (from river-profile map). Prior to Oct. 31, 1929, staff gage at site three-quarters of a mile upstream at different datum.

Average discharge.--27 years (1910-11, 1912-14, 1929-53), 2,285 cfs.

Extremes.--Maximum discharge during year, 34,200 cfs Jan. 18 (gage height, 15.80 ft); minimum, 56 cfs Oct. 4; minimum daily, 63 cfs Oct. 12, Nov. 9.
1910-14, 1929-53: Maximum discharge, 58,000 cfs Mar. 31, 1931 (gage height, 20.6 ft), from rating curve extended above 18,000 cfs; minimum, 53 cfs Oct. 4, 1931 (gage height, 0.53 ft); minimum daily, that of Oct. 12, Nov. 9, 1952.
Revisions.--The maximum discharge for the water year 1914 has been revised to 15,400 cfs Jan. 5, 1914 (gage height, 7.3 ft), superseding figure published in WSP 394.

Remarks.--Records good. No diversion above station for irrigation during year; about 85,000 acre-ft was diverted from Bull Run River by Portland Water Bureau. Flow slightly regulated by Bull Run Lake and Lake Ben Morrow of Portland Water Bureau; considerable diurnal fluctuation by Bull Run powerplant of Portland General Electric Co.

Revisions.--Revised figures of discharge, in cubic feet per second, for periods in the water years 1910-12, and 1948, superseding those published in WSP 292, 312, 332, and 1124, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1910		1911-Con.		1911-Con.		1911-Con.	
June 26	900	Apr. 8	2,400	Apr. 27	3,500	Oct. 22	800
27	850	9	2,700	Oct. 2	2,690	23	780
28	850	10	3,000	3	1,940	24	740
29	800	11	2,500	4	1,500	25	700
30	850	12	2,200	8	920	26	680
July 1	800	13	2,000	9	860	27	660
		14	1,900	10	1,800	28	640
1911		15	2,100	11	1,400	29	620
Apr. 1	6,000	16	2,100	12	1,250	30	600
2	5,000	17	2,200	13	1,150	31	580
3	4,000	18	2,300	14	1,300		
4	3,400	19	2,500	15	1,200	1947	
5	2,800	24	3,500	16	1,100	Oct. 27	2,020
6	2,600	25	5,000	17	1,000		
7	2,400	26	4,000	18	970		

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
June 1910	33,110	2,370	800	1,100	2.50	2.79	65,500
July	21,432	800	510	691	1.57	1.81	42,500
April 1911	88,380	6,000	1,900	2,950	6.70	7.48	176,000
Water year 1910-11	841,268	15,600	376	2,300	5.23	71.17	1,670,000
October 1911	32,740	2,690	580	1,060	2.41	2.78	65,200
Calendar year 1911	789,902	15,600	376	2,160	4.91	66.83	1,570,000
October 1947	113,300	13,400	557	3,655	8.31	9.58	224,700
Calendar year 1947	854,826	16,300	111	2,342	5.32	72.26	1,695,000
Water year 1947-48	1,023,215	27,100	118	2,796	6.35	86.48	2,029,000

Sandy River below Bull Run River, near Bull Run, Oreg.--Continued

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.7	60	4.0	1,810
1.0	115	5.0	2,840
1.5	255	7.0	5,960
2.0	445	10.0	12,900
3.0	1,010	15.0	31,000

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	434	132	*348	1,670	11,800	1,720	2,590	3,010	3,230	1,110	446	476
2	432	69	351	3,810	7,940	1,640	2,290	2,700	2,850	1,080	352	496
3	348	412	331	4,690	15,300	1,530	*1,920	2,360	2,530	1,100	524	514
4	66	418	425	3,150	11,000	1,430	1,940	2,680	2,310	1,030	601	526
5	69	426	480	2,440	9,100	1,530	1,880	3,230	2,210	1,040	662	448
6	425	418	377	*1,960	12,400	1,430	1,820	*3,550	2,720	996	581	406
7	412	345	597	2,120	9,990	1,440	1,770	3,250	4,410	944	663	136
8	408	70	618	3,880	7,950	1,670	1,650	3,190	4,130	1,020	677	*540
9	404	63	500	13,900	5,710	2,140	1,530	3,140	3,600	766	512	496
10	432	388	1,530	7,580	4,440	2,280	1,520	2,800	3,320	880	599	535
11	75	426	1,470	7,720	*3,620	2,460	1,470	2,490	2,880	862	582	488
12	63	465	2,610	9,770	3,060	2,490	1,630	2,380	2,850	886	596	518
13	446	608	1,750	9,670	2,720	2,190	1,580	2,290	2,730	880	583	120
14	418	502	1,360	7,460	2,540	1,950	1,510	2,440	2,110	916	471	436
15	409	75	1,430	5,800	2,550	1,920	1,480	2,310	*1,800	832	484	454
16	374	66	1,120	13,600	3,110	2,590	1,610	2,120	2,270	772	227	448
17	*286	434	923	23,200	5,210	2,630	1,850	2,160	2,070	754	544	432
18	70	370	822	*30,900	4,020	2,340	1,940	2,380	1,600	742	532	394
19	74	345	719	*19,300	3,180	2,330	2,200	4,290	1,750	736	559	388
20	394	146	694	12,500	2,810	2,300	2,760	4,550	2,090	700	561	322
21	375	210	649	9,100	2,490	2,370	3,020	4,030	2,000	700	541	394
22	395	296	1,120	9,140	2,350	5,390	2,970	3,500	1,700	682	422	395
23	458	272	1,210	*14,200	2,170	6,590	3,600	3,270	1,500	694	87	410
24	478	291	943	7,830	2,020	5,650	3,520	3,590	1,550	635	654	392
25	95	274	754	6,940	1,890	5,470	3,220	3,190	1,470	630	594	386
26	72	273	687	6,010	1,780	4,070	3,210	3,420	1,370	620	770	366
27	464	242	670	4,630	1,740	3,150	4,530	7,350	1,380	*868	710	320
28	390	271	619	4,990	1,860	3,060	4,680	5,590	1,270	682	597	680
29	386	216	1,380	8,210	-	2,700	3,670	4,610	1,310	580	588	482
30	510	308	2,320	9,550	-	2,880	3,320	4,340	1,240	560	132	580
31	440	-	1,930	11,900	-	3,050	-	3,620	-	573	515	-
Total	10,102	8,831	30,737	277,620	144,550	84,390	72,680	103,830	68,250	25,270	16,366	12,978
Mean	326	294	992	8,955	5,162	2,722	2,423	3,349	2,275	815	528	433
Cfsm	0.741	0.668	2.25	20.4	11.7	6.19	5.51	7.61	5.17	1.85	1.20	0.984
In.	0.85	0.75	2.60	23.47	12.22	7.13	6.14	8.78	5.77	2.14	1.38	1.10
Ac-ft	20,040	17,520	60,970	550,700	286,700	167,400	144,200	205,900	135,400	50,120	32,460	25,740

Calendar year 1952: Max 14,400 Min 63 Mean 1,584 Cfsm 3.60 In. 49.01 Ac-ft 1,150,000
Water year 1952-53: Max 30,900 Min 63 Mean 2,344 Cfsm 5.33 In. 72.33 Ac-ft 1,697,000

Peak discharge (base, 17,000 cfs).--Jan. 9 (7:30 a.m.) 18,400 cfs (11.70 ft); Jan. 18 (4 p.m.) 34,200 cfs (15.80 ft); Jan. 23 (12:30 a.m.) 19,900 cfs (12.15 ft); Jan. 31 (11 to 12 p.m.) 20,700 cfs (12.36 ft); Feb. 3 (1:30 p.m.) 18,200 cfs (11.66 ft).

* Discharge measurement made on this day.

Washougal River near Washougal, Wash.

Location.--Lat 45°37'20", long. 122°18'00", in SE¼ sec. 27, T. 2 N., R. 4 E., on right bank half a mile upstream from Cougar Creek and 5½ miles northeast of Washougal.

Drainage area.--108 sq mi.

Records available.--September 1944 to September 1953.

Gage.--Staff gage and crest-stage indicator; gage read twice daily. Altitude of gage is 175 ft (from topographic map).

Average discharge.--9 years, 895 cfs.

Extremes.--Maximum discharge during year, 13,100 cfs Jan. 18 (gage height, 12.9 ft, from graph based on gage readings); minimum observed, 45 cfs Oct. 7 (gage height, 1.38 ft). 1944-53: Maximum discharge, 17,600 cfs Feb. 17, 1949, Feb. 24, 1950 (gage height, 15.5 ft, from graph based on gage readings), from rating curve extended above 12,000 cfs on basis of logarithmic plotting; minimum observed, that of Oct. 7, 1952.

Remarks.--Records good. No diversion or regulation.

Revisions (water years).--WSP 1248: 1945-47, 1948(M), 1949-50, 1951(P).

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.3	36	4.0	1,180
1.5	60	5.0	1,990
1.7	93	6.0	3,110
2.0	165	7.0	4,410
2.3	261	8.0	5,750
2.6	375	9.0	7,150
3.0	555	10.0	8,800
3.5	840	12.0	11,700

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	68	177	1,080	a4,000	575	942	935	580	227	95	162
2	52	57	217	4,150	a4,000	555	828	900	525	217	93	146
3	52	57	301	5,480	7,650	496	750	756	*460	214	93	124
4	51	56	696	*1,920	a4,200	460	690	684	424	*208	106	112
5	50	56	984	1,230	a3,100	460	644	*627	403	192	99	104
6	50	56	545	1,080	a3,700	456	654	644	478	189	101	95
7	*46	55	1,250	1,110	a3,000	451	610	678	828	183	104	93
8	48	51	1,120	3,110	a2,500	505	570	666	1,060	177	97	93
9	54	51	792	5,260	a2,000	585	520	638	852	165	*95	93
10	52	54	2,160	2,720	a1,600	622	482	590	666	162	89	95
11	52	88	1,620	3,760	a1,300	654	451	530	550	154	84	86
12	51	93	5,470	*4,510	*963	744	492	478	520	152	82	84
13	50	162	2,290	3,700	804	738	560	438	482	149	80	*84
14	47	154	1,220	3,210	708	684	535	411	420	154	75	80
15	47	160	810	2,880	864	762	500	379	387	146	75	79
16	47	112	530	8,580	1,520	2,290	510	367	359	141	77	79
17	47	91	496	*10,800	2,400	1,610	540	331	335	138	75	79
18	46	*75	399	*11,000	1,500	1,380	590	407	324	133	75	75
19	48	72	359	7,860	1,170	*1,240	654	738	407	128	75	72
20	50	68	327	4,600	970	1,330	684	649	383	128	74	74
21	52	66	327	a3,800	864	1,660	622	921	351	124	75	74
22	63	63	858	4,780	786	3,400	616	1,050	331	121	72	70
23	64	62	750	*7,160	726	3,510	852	882	308	119	72	75
24	75	60	500	a4,000	708	2,750	804	991	297	114	121	74
25	57	60	415	a3,500	654	2,010	649	907	293	114	152	72
26	56	56	375	a3,000	654	1,510	720	804	275	110	331	70
27	51	57	335	a2,800	616	1,190	858	1,560	265	108	632	72
28	50	75	367	a3,400	595	1,100	956	1,300	275	106	379	114
29	54	86	570	4,220	-	935	949	1,010	254	104	268	91
30	72	136	1,340	4,410	-	977	942	840	241	101	205	112
31	77	-	1,220	5,000	-	1,110	-	666	-	101	171	-
Total	1,666	2,357	28,820	133,910	53,552	36,749	20,174	22,777	13,333	4,579	4,222	2,733
Mean	53.7	78.6	930	4,320	1,913	1,185	672	735	444	148	136	91.1
Cfsm	0.497	0.728	8.61	40.0	17.7	11.0	6.22	6.81	4.11	1.37	1.26	0.844
In.	0.57	0.81	9.92	46.11	18.44	12.65	6.95	7.84	4.59	1.58	1.45	0.94
Ac-ft	3,300	4,680	57,160	265,600	106,200	72,890	40,010	45,180	26,450	9,080	8,370	5,420

Calendar year 1952: Max 7,920 Min 46 Mean 545 Cfsm 5.05 In. 68.67 Ac-ft 395,700
Water year 1952-53: Max 11,000 Min 46 Mean 890 Cfsm 8.24 In. 111.85 Ac-ft 644,300

Peak discharge (base, 5,000 cfs).--Jan. 3 (time unknown) 6,310 cfs (8.40 ft); Jan. 9 (time unknown) 7,280 cfs (9.09 ft); Jan. 18 (time unknown) 13,100 cfs (12.9 ft); Jan. 23 (time unknown) 9,200 cfs (10.40 ft); Jan. 31 (time unknown) 5,120 cfs (7.55 ft); Feb. 3 (8:15 a.m.) 8,180 cfs (9.72 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for stations on nearby streams.

Little Washougal River near Washougal, Wash.

Location.--Lat 45°36'45", long. 122°21'30", in SE¼ sec. 31, T. 2 N., R. 4 E., on right bank 20 ft downstream from road bridge, 1 mile upstream from mouth, and 2½ miles north of Washougal.

Drainage area.--23.8 sq mi.

Records available.--June 1951 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 115 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,620 cfs Jan. 18 (gage height, 7.73 ft); minimum, 4.1 cfs Nov. 28 (gage height, 3.16 ft).
1951-53: Maximum discharge, that of Jan. 18, 1953; minimum, that of Nov. 28, 1952.

Remarks.--Records fair. Some diversion for domestic use. No regulation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used July 2 to Aug. 4)

3.2	3.8	4.6	175
3.3	6.8	5.0	290
3.5	16.0	5.5	495
3.7	30	6.0	720
4.0	61	6.5	970
4.3	110	7.0	1,220

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.4	8.6	11.5	87	504	78	158	71	110	32	10	16
2	5.5	7.1	20	175	428	75	140	72	94	30	10	14
3	5.5	6.8	23	188	648	72	126	69	*82	29	10	10.5
4	6.1	6.4	21	*146	508	65	110	64	74	*27	13.5	8.2
5	5.5	6.8	40	116	436	60	103	60	71	26	13	8.2
6	5.5	6.4	27	92	401	56	97	*57	80	24	19	9.0
7	*5.5	6.4	59	112	353	55	89	64	99	22	15.5	9.4
8	6.1	6.8	44	252	281	54	94	68	112	22	13.5	11
9	6.4	7.1	37	405	230	53	85	61	99	21	*12.5	10
10	6.8	7.8	96	260	188	55	78	57	87	20	11	9.4
11	6.8	12.5	69	287	152	61	75	55	78	18.5	9.0	8.2
12	7.1	13	89	325	126	57	74	53	82	19	8.2	8.6
13	6.8	15.5	80	333	106	59	71	50	78	18.5	8.2	*8.6
14	6.1	12.5	53	311	101	56	65	50	64	20	7.1	8.2
15	5.2	9.0	40	284	96	65	61	50	60	19.5	7.8	7.8
16	5.8	8.2	32	642	148	168	64	50	56	17	9.4	7.1
17	6.1	7.8	27	920	*278	209	65	48	51	16	8.6	7.8
18	5.5	*7.4	24	*1,220	242	192	57	61	50	15.5	7.8	7.4
19	6.1	7.1	22	804	198	190	56	62	60	16.5	7.1	7.1
20	6.4	7.1	20	720	175	*190	53	60	57	16	7.1	6.8
21	6.8	7.1	24	562	142	212	53	77	49	15.5	7.4	5.8
22	6.8	7.4	68	629	144	486	54	87	45	14	6.8	6.8
23	7.1	7.4	69	730	128	477	60	103	42	14	7.1	8.6
24	10.5	7.1	49	544	118	381	51	144	41	14	18	7.8
25	7.1	6.8	39	576	106	297	48	130	40	13.5	21	6.4
26	6.1	7.1	32	540	97	242	51	186	39	13	56	6.4
27	6.4	7.1	30	414	90	200	64	405	37	12.5	55	6.8
28	6.1	7.4	30	458	85	203	60	269	39	12	34	18
29	7.8	7.4	64	518	-	170	65	200	37	11	26	9.4
30	11.5	8.6	82	482	-	182	69	158	35	11	18	29
31	10.5	-	82	572	-	172	-	132	-	11	16	-
Total	207.9	243.7	1,403.5	13,704	6,509	4,902	2,296	3,073	1,948	571.0	473.6	288.3
Mean	6.71	8.12	45.3	442	232	158	76.5	99.1	64.9	18.4	15.3	9.61
Cfsm	0.282	0.341	1.90	18.6	9.75	6.64	3.21	4.16	2.73	0.773	0.643	0.404
In.	0.32	0.38	2.19	21.41	10.17	7.66	3.59	4.80	3.04	0.89	0.74	0.45
Ac-ft	412	483	2,780	27,180	12,910	9,720	4,550	6,100	3,860	1,130	939	572

Calendar year 1952: Max 758 Min 5.2 Mean 60.0 Cfsm 2.52 In. 34.30 Ac-ft 43,550
Water year 1952-53: Max 1,220 Min 5.2 Mean 97.6 Cfsm 4.10 In. 55.64 Ac-ft 70,640

Peak discharge (base, 1,100 cfs).--Jan. 18 (1 p.m.) 1,620 cfs (7.73 ft).
* Discharge measurement made on this day.

Middle Fork Willamette River above Salt Creek, near Oakridge, Oreg.

Location.--Lat 43°43'30", long. 122°26'20", in SW¼ sec. 22, T. 21 S., R. 3 E., on right bank 400 ft upstream from Salt Creek and 2 miles southeast of Oakridge.

Drainage area.--392 sq mi.

Records available.--October 1913 to September 1914, September 1935 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 1,202.8 ft above mean sea level (from river-profile survey). October 1913 to September 1914 staff gage at site 600 ft upstream at different datum.

Average discharge.--19 years, 1,115 cfs.

Extremes.--Maximum discharge during year, 26,800 cfs Jan. 18 (gage height, 10.87 ft), from rating curve extended above 13,000 cfs by logarithmic plotting; minimum, 320 cfs Nov. 6-11, Sept. 25-28.
1913-14, 1935-53: Maximum discharge, 34,000 cfs Dec. 28, 1945 (gage height, 12.06 ft), from rating curve extended above 13,000 cfs by logarithmic plotting; minimum, 201 cfs Nov. 27 to Dec. 2, 1936 (gage height, 1.53 ft).

Remarks.--Records excellent except those for periods of no gage-height record, which are fair.

Revisions (water years).--WSP 1248: 1914.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

2.5	320	6.0	5,260
3.0	540	7.0	8,370
3.5	880	9.0	16,800
4.0	1,350	9.7	20,400
5.0	2,900		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	352	327	375	856	3,000	1,100	1,230	1,520	1,910	1,160	460	395
2	348	327	450	1,580	3,500	1,050	1,140	1,400	1,900	1,200	455	383
3	344	327	418	1,450	9,000	1,000	1,110	1,310	*1,780	1,300	450	375
4	344	324	426	1,170	7,000	920	1,120	1,340	1,670	1,310	445	367
5	341	324	510	1,030	6,500	864	1,170	1,590	1,610	1,310	440	367
6	341	320	485	928	8,500	840	1,190	1,860	2,020	*1,360	465	418
7	341	320	1,120	1,340	6,000	860	1,130	1,960	3,490	1,420	445	371
8	341	320	888	3,060	5,500	950	1,050	1,770	3,450	1,350	431	367
9	341	320	624	7,120	4,000	1,100	969	1,630	2,800	1,230	422	359
10	341	320	1,640	3,940	3,200	*1,210	928	1,520	2,470	1,160	413	355
11	341	330	1,510	2,660	2,500	1,220	888	1,400	2,240	1,110	408	352
12	338	367	1,720	3,710	2,100	1,320	856	1,310	2,160	1,060	*404	348
13	334	*426	1,290	5,200	1,800	1,210	832	1,280	2,050	1,010	404	344
14	334	465	1,070	3,750	1,600	1,120	816	1,360	1,880	969	400	341
15	334	400	912	2,510	1,500	1,050	816	1,350	1,820	904	400	338
16	330	367	*808	3,180	1,400	1,090	904	1,270	1,780	816	387	338
17	330	352	716	6,480	2,100	1,140	1,090	1,260	1,790	765	383	334
18	334	344	636	20,200	2,400	1,220	1,100	1,460	1,820	730	375	330
19	338	348	576	10,600	1,800	1,530	1,150	2,980	1,700	695	371	330
20	334	348	564	9,490	1,600	1,500	1,360	3,040	1,520	654	375	327
21	334	341	552	6,230	1,400	1,430	1,630	2,740	1,440	618	371	327
22	334	334	606	4,010	1,300	1,820	1,810	2,470	1,400	600	367	*327
23	334	330	600	3,040	1,200	2,100	1,940	2,280	1,380	582	363	327
24	334	330	552	2,460	1,150	2,590	1,770	2,180	1,330	558	383	327
25	334	330	520	2,190	1,100	2,700	1,700	1,910	1,290	546	379	324
26	334	327	500	2,100	1,050	2,080	1,840	2,030	1,260	530	681	320
27	330	327	500	*1,850	1,050	1,740	*2,180	2,260	1,240	510	495	320
28	330	327	485	1,800	1,100	1,620	2,180	2,190	1,230	500	431	338
29	330	324	558	2,200	-	1,480	1,850	2,030	1,230	490	490	348
30	330	327	936	2,300	-	1,380	1,670	1,860	1,200	480	431	341
31	330	-	880	2,500	-	1,320	-	1,770	-	470	408	-
Total	10,435	10,273	23,427	121,034	84,350	42,554	39,419	56,330	54,860	27,397	13,132	10,438
Mean	337	342	756	3,904	3,012	1,373	1,314	1,817	1,829	884	424	348
Cfsm	0.860	0.872	1.93	9.96	7.68	3.50	3.35	4.64	4.67	2.26	1.08	0.888
In.	0.99	0.97	2.22	11.48	8.00	4.04	3.74	5.34	5.20	2.60	1.25	0.99
Ac-ft	20,700	20,380	46,470	240,100	167,300	84,400	78,190	111,700	108,800	54,340	26,050	20,700

Calendar year 1952: Max 6,470 Min 320 Mean 1,122 Cfsm 2.86 In. 38.97 Ac-ft 814,700
Water year 1952-53: Max 20,200 Min 320 Mean 1,352 Cfsm 3.45 In. 46.82 Ac-ft 979,100

Peak discharge (base, 4,800 cfs).--Jan. 9 (10 a.m.) 8,710 cfs (7.10 ft); Jan. 13 (3 p.m.) 5,640 cfs (6.13 ft); Jan. 18 (3:30 p.m.) 26,800 cfs (10.87 ft); Feb. 3 (time unknown) 11,600 cfs (7.86 ft); Feb. 6 (time and discharge unknown).

* Discharge measurement made on this day.

Note.--No gage-height record Jan. 28 to Mar. 3, Mar. 7-9; discharge estimated on basis of recorded range in stage and records for station below North Fork near Oakridge.

Salmon Creek near Oakridge, Oreg.

Location.--Lat 43°45'20", long. 122°23'00", in SW¼ sec. 7, T. 21 S., R. 4 E., on right bank a quarter of a mile upstream from Slide Creek and 4 miles east of Oakridge.

Drainage area.--117 sq mi at cable a quarter of a mile above gage, where all discharge measurements are made.

Records available.--Oct. 11 to Nov. 21, 1909 (gage heights and one discharge measurement only), February 1913 to October 1919, October 1933 to September 1953. Published as Kelsey River near Hazeldell 1909.

Gage.--Water-stage recorder. Datum of gage is 1,421.83 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1914, staff gages at several sites within 3 miles of present site at various datums. Oct. 1, 1914, to Oct. 14, 1919, water-stage recorder at site 1 mile downstream at different datum.

Average discharge.--24 years (1913-15, 1917-19, 1933-53), 399 cfs.

Extremes.--Maximum discharge during year, 5,710 cfs Jan. 18 (gage height, 7.16 ft); minimum, 138 cfs Nov. 28-30 (gage height, 1.28 ft).
1913-19, 1933-53: Maximum discharge, 8,040 cfs Dec. 28, 1945 (gage height, 8.40 ft), from rating curve extended above 4,000 cfs by logarithmic plotting; minimum, 63 cfs Jan. 8, 1937 (gage height, 0.87 ft).

Remarks.--Records good. No regulation. Since 1936 village of Oakridge has diverted water around station in an 8-inch pipe. Tunnel and control gates that were built to divert part of outflow from Waldo Lake into Salmon Creek basin were not used during year but there is leakage under control gates, 13.0 cfs measured, Oct. 7, 1953.

Revisions (water years).--WSP 794: 1934. WSP 814: Drainage area. WSP 1124: 1935, 1942(M), 1943, 1946(M). WSP 1248: 1915, 1918.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
1.2	128	3.0	775	1.3	158	3.0	820
1.6	190	4.0	1,480	1.5	195	4.0	1,570
2.0	310	5.0	2,550	2.0	333	6.0	3,880
2.5	525	7.0	5,440	2.5	540		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	160	151	156	233	1,250	412	468	540	646	388	220	197
2	159	151	167	489	1,420	396	450	508	620	385	218	195
3	159	150	159	417	3,110	385	442	486	*580	396	218	193
4	157	150	186	370	2,400	369	437	513	555	392	218	191
5	157	150	195	330	2,540	358	442	615	536	385	216	191
6	157	150	186	296	3,780	351	446	706	658	*388	228	191
7	156	148	306	354	2,520	355	433	730	1,140	388	220	189
8	156	148	248	502	2,000	377	416	664	1,160	377	216	187
9	156	147	208	1,250	1,490	408	396	605	1,020	351	211	185
10	156	147	346	998	1,150	*429	381	555	916	340	209	183
11	157	151	350	760	940	429	369	518	856	326	204	183
12	157	*162	378	908	784	442	365	495	826	320	202	183
13	156	170	326	1,120	682	429	362	495	766	307	*202	181
14	154	167	281	932	615	416	355	522	700	300	200	181
15	154	157	*252	725	560	404	347	518	670	288	200	179
16	153	151	236	872	536	412	362	490	630	279	197	179
17	153	147	216	1,630	658	412	404	482	620	273	197	179
18	153	146	199	4,680	664	421	408	550	615	265	195	177
19	153	146	190	2,910	580	446	429	1,090	575	262	195	177
20	153	144	192	2,130	522	454	490	1,140	536	256	195	177
21	153	144	192	1,610	472	450	590	1,020	504	248	195	*175
22	153	143	208	1,250	450	595	676	892	490	246	195	175
23	153	143	204	1,070	433	664	724	838	477	243	195	175
24	156	141	192	910	416	796	664	796	459	240	204	175
25	154	141	184	820	404	844	635	718	437	233	202	175
26	153	141	180	730	396	724	670	682	425	230	297	173
27	151	140	178	*630	404	630	*772	784	421	228	226	173
28	151	138	172	640	416	595	766	778	416	226	211	185
29	151	136	184	808	-	545	658	754	416	226	226	183
30	151	139	222	886	-	522	585	712	404	226	206	185
31	151	-	216	975	-	500	-	658	-	223	202	-
Total	4,793	4,441	6,909	32,235	31,592	14,970	14,942	20,854	19,074	9,235	6,520	5,472
Mean	155	148	223	1,040	1,128	483	498	673	636	298	210	182
Cfsm	1.32	1.26	1.91	8.89	9.64	4.13	4.26	5.75	5.44	2.55	1.79	1.56
In.	1.52	1.41	2.20	10.25	10.04	4.76	4.75	6.63	6.06	2.94	2.07	1.74
Ac-ft	9,510	8,810	13,700	63,940	62,660	29,690	29,640	41,360	37,830	18,320	12,930	10,850

Calendar year 1952: Max 1,570 Min 138 Mean 408 Cfsm 3.49 In. 47.42 Ac-ft 295,900
Water year 1952-53: Max 4,680 Min 138 Mean 469 Cfsm 4.01 In. 54.37 Ac-ft 339,200

Peak discharge (base, 1,500 cfs).--Jan. 18 (4 p.m.) 5,710 cfs (7.16 ft); Feb. 3 (1:30 p.m.) 3,610 cfs (5.82 ft); Feb. 6 (3:30 a.m.) 4,380 cfs (6.34 ft).
* Discharge measurement made on this day.

Waldo Lake Outlet near Oakridge, Oreg.

Location.--Lat 43°46'00", long. 122°03'10", in NW¼ sec. 7, T. 21 S., R. 6 E., on left bank on artificial outlet channel of Waldo Lake, 20 miles east of Oakridge.

Drainage area.--30 sq mi, approximately.

Records available.--October 1936 to September 1953 (discontinued).

Gage.--Water-stage recorder and sharp-crested weir. Altitude of gage is 5,410 ft (from topographic map).

Average discharge.--17 years, 31.7 cfs.

Extremes.--Maximum discharge during year, 105 cfs Feb. 8 (gage height, 2.35 ft); no flow Oct. 12 to Dec. 19.
1936-53: Maximum discharge, 144 cfs Jan. 2, 1943 (gage height, 2.98 ft), from rating curve extended above 90 cfs; no flow at times.

Remarks.--Records good. At times seiches on Waldo Lake cause rapid changes in stage at gage several times per hour. Lake not artificially regulated. Diversion tunnel into head of Black Creek, near south end of lake, built about 1914, is not used; but there is leakage past control gates, 13.0 cfs, measured Oct. 7, 1952.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.0	0	1.0	31
.1	1.3	2.0	84
.3	5.8	2.5	114
.6	15		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*1.5		0	1.3	57	83	*72	58	63	63	34	17
2	1.5		0	2.6	62	82	70	58	63	63	33	16
3	1.3		0	3.0	75	80	68	57	62	63	32	15
4	1.2		0	2.8	81	79	66	56	62	62	31	15
5	1.0		0	2.6	89	77	65	55	61	62	30	14
6	.9		0	2.6	98	74	65	55	65	62	30	13
7	.8		0	4.1	101	73	65	55	70	62	29	13
8	.6		0	6.9	104	71	64	57	72	62	28	12
9	.4		0	10	103	69	63	57	73	62	27	11
10	.3		0	12	100	68	62	57	73	61	26	11
11	.1		0	12	98	68	62	56	72	61	25	10
12	0		0	14	96	68	62	55	73	60	24	9.7
13	0		0	16	94	68	62	54	73	59	23	9.4
14	0		0	17	92	67	62	54	72	58	*23	8.8
15	0		0	17	94	66	61	54	71	56	23	8.5
16	0		0	21	94	67	60	54	71	55	22	8.0
17	0		0	26	98	70	60	53	71	54	21	7.4
18	0		0	36	103	70	59	54	71	53	20	7.2
19	0		0	42	100	71	58	59	71	51	20	6.6
20	0		.1	46	98	75	57	61	71	50	19	6.3
21	0		.4	47	95	78	56	63	70	49	18	5.8
22	0		.9	49	95	83	55	63	70	47	18	5.3
23	0		.9	49	94	82	55	64	68	46	17	*4.8
24	0		.8	49	91	82	54	64	68	44	17	4.6
25	0		.5	50	89	82	54	64	67	43	16	4.4
26	0		.5	53	87	79	54	64	66	42	18	3.9
27	0		.5	53	85	78	55	65	65	40	18	3.6
28	0		.5	54	84	76	56	64	65	39	18	3.4
29	0		.6	55	-	76	57	63	65	38	18	3.2
30	0		.8	*56	-	75	58	63	64	37	18	2.8
31	0		.8	56	-	74	-	62	-	36	17	-
Total	9.6	0	7.3	866.1	2,557	2,311	1,817	1,818	2,048	1,640	713	260.7
Mean	0.310	0	0.235	27.9	91.3	74.5	60.6	58.6	68.3	52.9	23.0	8.69
Ac-ft	19	0	14	1,720	5,070	4,580	3,600	3,610	4,060	3,250	1,410	517

Calendar year 1952: Max 80 Min 0 Mean 36.2 Ac-ft 26,260
Water year 1952-53: Max 104 Min 0 Mean 38.5 Ac-ft 27,850

* Discharge measurement made on this day.

North Fork of Middle Fork Willamette River near Oakridge, Oreg.

Location.--Lat 43°45'30", long. 122°30'20", in SW¼ sec. 7, T. 21 S., R. 3 E., on left bank 1 mile upstream from mouth and 2½ miles northwest of Oakridge.

Drainage area.--246 sq mi.

Records available.--October 1909 to February 1916 (fragmentary), September 1935 to September 1953. October 1909 to September 1912 published as "near Hazeldell".

Gage.--Water-stage recorder. Datum of gage is 1,029.6 ft above mean sea level (river-profile survey). Prior to Feb. 26, 1916, water-stage recorder or staff gages at several sites within three-quarters of a mile of present site at various datums. Sept. 16, 1935, to Oct. 3, 1938, staff gage at present site and datum.

Average discharge.--18 years (1935-53), 779 cfs.

Extremes.--Maximum discharge during year, 15,100 cfs Jan. 18 (gage height, 15.58 ft), from rating curve extended above 8,000 cfs by logarithmic plotting; minimum, 73 cfs sometime during period Dec. 19-30 (gage height, 2.40 ft), probably caused by filling of log pond.
1909-16, 1935-53: Maximum discharge, 17,000 cfs Dec. 28, 1945 (gage height, 16.6 ft), from rating curve extended above 8,000 cfs by logarithmic plotting; minimum, 26 cfs Oct. 14, 1939.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Tunnel and control gates built to divert part of outflow from Waldo Lake into Salmon Creek basin not used during year. Occasional diurnal fluctuations during low-water periods caused by log ponds above station.

Cooperation.--Gage-height record collected in cooperation with U. S. Weather Bureau.

Revisions (water years).--WSP 1248: 1914-16.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 2				Feb. 3 to Sept. 30			
2.8	130	7.0	2,700	2.7	142	5.0	1,120
3.5	310	10.0	6,200	3.0	202	7.0	2,800
4.0	510	15.0	14,100	3.5	335	11.0	7,650
5.0	1,090			4.0	540		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	144	148	171	412	2,660	772	958	1,130	1,130	551	250	207
2	146	146	201	1,350	3,120	732	904	1,060	1,080	540	230	204
3	144	148	222	1,060	7,020	705	874	994	*1,010	540	230	198
4	144	146	201	870	5,140	672	874	1,020	946	530	232	189
5	144	144	301	709	5,380	562	880	1,200	916	515	232	187
6	146	148	a290	643	6,670	622	898	1,350	1,040	500	252	189
7	140	146	530	692	5,160	622	856	1,390	1,730	*490	242	184
8	144	146	465	590	4,380	622	790	1,310	1,850	472	232	184
9	146	146	283	3,170	3,110	868	732	1,200	1,670	450	228	180
10	146	146	610	2,820	2,360	*838	705	1,080	1,570	437	220	178
11	144	154	560	1,910	1,890	850	661	988	1,400	388	216	178
12	144	176	738	2,500	1,570	892	686	922	1,340	391	209	172
13	144	*222	590	3,080	1,350	832	666	910	1,270	377	211	170
14	142	219	483	2,330	1,240	772	666	940	1,150	366	204	168
15	142	188	416	1,690	1,110	732	650	958	1,090	352	211	166
16	138	160	380	2,680	1,080	754	683	910	1,050	335	207	166
17	138	146	*338	5,170	1,630	749	778	868	1,010	325	*204	166
18	138	150	310	12,700	1,530	772	802	988	994	309	202	166
19	140	146	304	7,450	1,260	850	850	2,010	940	303	200	164
20	140	148	304	5,890	1,110	898	1,020	2,220	886	297	198	162
21	140	144	a310	4,180	1,000	910	1,220	1,920	814	286	195	162
22	138	142	a330	3,050	958	1,260	1,340	1,700	772	283	191	*162
23	138	140	a350	2,550	886	1,370	1,410	1,600	749	278	189	166
24	146	140	a320	2,070	832	1,370	1,270	1,540	710	275	202	162
25	144	140	a300	1,810	778	1,660	1,210	1,360	678	272	200	158
26	142	138	a290	1,590	760	1,410	1,270	1,290	656	268	346	156
27	140	140	a270	*1,440	754	1,260	1,450	1,500	639	262	272	155
28	142	140	a260	1,450	796	1,180	*1,540	1,470	634	253	228	152
29	142	a140	268	1,790	-	1,080	1,350	1,370	622	255	260	174
30	144	a140	456	2,170	-	1,050	1,250	1,300	590	252	255	162
31	144	-	416	2,420	-	1,050	-	1,200	-	250	220	-
Total	4,414	4,577	11,267	82,636	65,534	28,916	29,213	39,698	30,936	11,407	6,948	5,209
Mean	142	153	363	2,666	2,340	933	974	1,281	1,031	368	224	174
Cfsm	0.577	0.622	1.48	10.8	9.51	3.79	3.96	5.21	4.19	1.50	0.911	0.707
In.	0.67	0.69	1.70	12.49	9.91	4.37	4.42	6.00	4.68	1.72	1.05	0.79
Ac-ft	8,760	9,080	22,350	163,900	130,000	57,350	57,940	78,740	61,360	22,630	13,780	10,330

Calendar year 1952: Max 3,740 Min 138 Mean 699 Cfsm 2.84 In. 38.86 Ac-ft 507,300
Water year 1952-53: Max 12,700 Min 138 Mean 879 Cfsm 3.57 In. 48.49 Ac-ft 636,200

Peak discharge (base, 3,500 cfs).--Jan. 9 (12 m.) 3,860 cfs (8.13 ft); Jan. 18 (4 p.m.) 15,100 cfs (15.58 ft); Feb. 3 (12:30 p.m.) 7,940 cfs (11.20 ft); Feb. 6 (about 3 a.m.) about 7,500 cfs.

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for Salmon Creek near Oakridge, recorded range in stage and weather records.

Middle Fork Willamette River below North Fork, near Oakridge, Oreg.

Location.--Lat 43°48'10", long. 122°33'30", in SW¼ sec. 27, T. 20 S., R. 2 E., on left bank half a mile below Whitehead Creek, 4 miles below North Fork of Middle Fork Willamette River, and 7 miles northwest of Oakridge.

Drainage area.--924 sq mi.

Records available.--March 1911 to September 1912 (fragmentary), July 1923 to September 1953. Published as "near Hazeldell" 1911-12 and as "at Eula" 1923-50.

Gage.--Water-stage recorder. Datum of gage is 934.76 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Mar. 22, 1911, to Sept. 30, 1912, staff gage at site 4 miles upstream just below North Fork, at different datum. July 1, 1923, to Aug. 11, 1935, staff gage and Aug. 12, 1935, to Sept. 30, 1950, water-stage recorder at site 4 miles downstream at different datum.

Average discharge.--29 years (1923-26, 1927-53), 2,627 cfs.

Extremes.--Maximum discharge during year, 59,400 cfs Jan. 18 (gage height, 12.16 ft); minimum, 686 cfs Nov. 29.
1911-12, 1923-53: Maximum discharge, 82,200 cfs Feb. 20, 1927 (gage height, 19.7 ft, from graph based on gage readings, site and datum then in use), from rating curve extended above 39,000 cfs by logarithmic plotting; minimum observed, 450 cfs Nov. 24, 25, Dec. 5, 6, 1929, Sept. 4-6, 16, 17, 1931.

Remarks.--Records excellent. No diversion; slight regulation above station by log ponds. Records of water temperatures for water year 1953 are given in WSP 1293.

Revisions (water years).--WSP 694: 1925-28. WSP 814: Drainage area for site at Eula. WSP 1248: 1924, 1925(M), 1926-28, 1929(M), 1930, 1933, 1946(M).

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30	
1.6	650	4.0	5,000	5.5	10,300
2.0	1,050	5.5	10,300	7.0	17,200
2.5	1,700	7.0	18,200	9.0	30,200
3.0	2,560			11.0	47,600

Note.--Same as preceding table above 5.5 ft.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	780	731	820	1,780	7,780	2,700	3,100	3,820	4,490	2,500	1,160	1,030
2	770	722	962	3,900	9,160	2,520	2,910	3,550	4,380	2,500	1,130	1,010
3	760	722	940	3,340	22,500	2,380	2,800	3,280	*4,100	2,620	1,130	973
4	760	722	995	2,720	17,200	2,270	2,760	3,340	3,820	2,620	1,130	962
5	750	722	1,180	2,320	15,700	2,180	2,820	3,900	3,680	2,560	1,130	951
6	750	722	1,100	2,110	21,300	2,130	2,860	4,520	4,350	2,620	1,180	1,010
7	750	722	2,250	2,520	15,900	2,130	2,800	4,760	7,740	*2,660	1,140	962
8	750	722	2,040	5,020	13,800	2,340	2,620	4,460	7,980	2,600	1,120	951
9	750	695	1,470	14,100	9,940	2,640	2,440	4,180	6,760	2,400	1,080	930
10	760	704	3,060	9,740	7,640	2,800	2,320	3,850	5,990	2,230	*1,060	920
11	750	731	2,910	6,440	6,110	*2,820	2,230	3,480	5,480	2,150	1,040	910
12	740	820	3,340	8,260	5,120	3,080	2,200	3,260	5,270	2,080	1,020	900
13	740	*930	2,660	11,600	4,380	2,890	2,160	3,190	4,970	1,990	1,020	890
14	731	984	2,160	8,660	3,980	2,700	2,160	3,340	4,490	1,910	1,030	880
15	722	880	1,870	6,050	3,650	2,580	2,100	3,370	4,350	1,840	1,040	870
16	722	800	1,680	7,520	3,460	2,620	2,230	3,210	4,180	1,730	1,020	870
17	722	760	*1,510	15,300	5,150	2,720	2,580	3,120	4,120	1,640	995	870
18	722	750	1,380	45,000	5,750	2,820	2,620	3,410	4,150	1,580	984	860
19	731	750	1,290	*26,700	4,520	3,370	2,700	6,940	3,900	1,520	973	860
20	731	750	1,280	20,000	3,900	3,480	3,170	7,840	3,580	1,480	984	860
21	731	740	1,260	13,800	3,430	3,430	3,750	6,970	3,320	1,440	984	850
22	740	731	1,400	9,980	3,230	4,460	4,220	6,170	3,230	1,380	973	*850
23	740	722	1,420	7,840	2,990	5,180	4,550	5,750	3,150	1,360	962	860
24	750	713	1,310	6,380	2,820	5,900	4,180	5,630	3,010	1,330	1,030	840
25	750	713	1,210	5,720	2,680	6,340	3,950	4,940	2,890	1,290	1,020	830
26	731	704	1,170	5,360	2,560	5,150	4,200	4,970	2,800	1,270	1,570	820
27	731	704	1,160	4,670	2,580	4,350	4,910	5,600	2,720	1,240	1,320	820
28	731	695	1,130	*4,430	2,740	4,020	*5,240	5,510	2,700	1,210	1,140	870
29	731	695	1,210	5,360	-	3,680	4,580	5,120	2,700	1,200	1,230	890
30	731	704	1,800	5,810	-	3,430	4,150	4,760	2,620	1,200	1,130	860
31	731	-	1,780	6,200	-	3,340	-	4,430	-	1,170	1,060	-
Total	22,988	22,460	49,747	278,630	209,970	102,450	95,310	140,670	126,920	57,320	33,785	26,959
Mean	742	749	1,605	8,988	7,499	3,305	3,177	4,538	4,231	1,849	1,090	899
Cfsm	0.803	0.811	1.74	9.73	8.12	3.58	3.44	4.91	4.58	2.00	1.18	0.973
In.	0.93	0.90	2.00	11.21	8.45	4.12	3.84	5.66	5.11	2.31	1.36	1.09
Ac-ft	45,600	44,550	98,670	552,700	416,500	203,200	189,000	279,000	251,700	113,700	67,010	53,470

Calendar year 1952: Max 15,100 Min 695 Mean 2,679 Cfsm 2.90 In. 39.47 Ac-ft 1,945,000
Water year 1952-53: Max 45,000 Min 695 Mean 3,198 Cfsm 3.46 In. 46.98 Ac-ft 2,315,000

Peak discharge (base, 11,000 cfs).--Jan. 9 (11 a.m.) 17,400 cfs (6.87 ft); Jan. 13 (3:30 p.m.) 12,200 cfs (5.88 ft); Jan. 18 (6 p.m.) 59,400 cfs (12.16 ft); Feb. 3 (2:30 p.m.) 26,400 cfs (8.49 ft); Feb. 6 (4:30 a.m.) 23,900 cfs (8.12 ft).
* Discharge measurement made on this day.

Middle Fork Willamette River at Lowell, Oreg.

Location.--Lat 43°54'30", long. 122°46'40", in NW¼ sec. 23, T. 19 S., R. 1 W., on left bank at bridge three-quarters of a mile south of Lowell and 4½ miles upstream from Lost Creek.

Drainage area.--994 sq mi.

Records available.--October 1946 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 668.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Aug. 23, 1950, staff gage at same site and datum.

Average discharge.--7 years, 3,549 cfs.

Extremes.--Maximum discharge during year, 62,600 cfs Jan. 18 (gage height, 12.46 ft), from rating curve extended above 33,000 cfs by logarithmic plotting; minimum, about 50 cfs May 1 (caused by construction operations at Lookout Point Dam); minimum daily, 792 cfs Sept. 27.
1946-53: Maximum discharge, that of Jan. 18, 1953; minimum, that of May 1, 1953. Maximum stage known, 13.9 ft Dec. 28, 1945.

Remarks.--Records good. No large diversion above station. Occasional diurnal fluctuation during periods of low water caused by log ponds upstream. Some regulation caused by construction operations at Lookout Point Dam above station. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 3 to Jan. 8)

Oct. 1 to Jan. 8		Jan. 9 to Sept. 30			
1.9	730	1.3	720	5.0	7,700
2.5	1,400	2.0	1,470	7.0	16,100
3.0	2,150	3.0	2,920	9.0	29,000
3.5	3,070	4.0	4,870	11.0	46,500
4.5	5,700				

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	802	840	920	1,960	7,840	3,070	3,450	6,980	4,920	2,450	1,220	1,110
2	802	820	1,140	3,820	8,010	2,890	3,290	3,970	*4,890	2,120	1,200	1,050
3	793	830	1,170	3,920	20,700	2,750	3,140	3,450	4,800	2,370	1,180	1,020
4	793	820	1,090	3,090	18,800	2,620	3,090	3,510	4,230	2,750	1,180	980
5	802	820	1,370	2,640	14,800	2,530	3,160	3,990	4,030	2,770	1,160	950
6	802	820	1,360	2,340	21,600	2,460	3,270	4,630	4,500	2,730	1,190	980
7	802	811	2,320	2,520	16,000	2,430	3,270	4,960	7,400	2,820	1,200	1,000
8	802	811	2,700	4,740	14,600	2,620	3,060	4,850	8,910	*2,850	1,180	960
9	802	811	1,820	13,600	10,300	2,890	2,870	4,570	7,500	*2,720	1,140	940
10	802	860	3,110	11,800	7,870	3,070	2,690	4,250	6,620	2,560	1,120	920
11	802	910	3,430	7,110	6,350	*3,160	2,610	3,890	5,870	2,380	1,100	910
12	802	997	3,770	7,800	5,340	3,400	2,560	3,620	5,600	2,310	1,050	900
13	811	1,130	3,130	*11,800	4,670	3,320	2,540	3,470	5,390	2,250	1,050	880
14	802	1,110	2,520	10,000	4,340	3,090	2,570	3,620	4,920	2,160	1,050	870
15	793	1,030	2,120	6,680	4,050	2,970	2,480	3,700	4,650	2,070	1,080	860
16	793	931	1,910	6,710	3,790	2,970	1,990	3,580	4,480	1,960	1,080	*850
17	793	870	1,740	13,800	5,150	3,130	2,320	3,430	4,420	1,850	1,050	850
18	793	860	*1,550	43,200	6,440	3,140	2,850	3,510	4,440	1,770	*1,010	840
19	793	860	1,440	*33,000	5,080	3,790	3,040	6,180	4,250	1,720	1,000	830
20	793	*860	1,410	20,300	4,360	4,110	2,850	8,730	3,930	1,660	990	830
21	811	860	1,410	15,600	3,910	4,050	3,600	7,730	3,640	1,590	990	820
22	811	850	1,580	10,800	3,640	4,630	4,440	6,930	3,490	1,530	980	820
23	820	850	1,620	8,730	3,430	5,440	4,870	6,320	3,430	1,480	970	820
24	840	840	1,500	7,050	3,220	5,870	4,690	6,440	3,310	1,450	990	820
25	840	840	1,370	6,300	3,040	6,620	3,440	5,650	3,140	1,410	1,030	810
26	840	840	1,310	*6,040	2,920	5,470	3,460	5,470	2,970	1,370	1,270	801
27	830	840	1,300	5,370	2,920	4,670	4,980	6,010	2,290	1,340	1,580	792
28	820	830	1,250	4,890	3,090	4,380	5,680	6,210	1,920	1,300	1,390	810
29	820	830	1,280	5,710	-	4,070	*5,170	5,740	1,920	1,280	1,300	870
30	820	840	1,850	6,010	-	3,790	3,960	5,270	2,220	1,250	1,280	870
31	830	-	2,050	6,410	-	3,720	-	4,870	-	1,240	1,190	-
Total	25,059	26,221	56,540	293,740	216,260	113,120	101,390	155,530	134,080	61,510	35,200	26,763
Mean	808	874	1,824	9,475	7,724	3,649	3,380	5,017	4,469	1,984	1,135	892
Cfsm	0.813	0.879	1.84	9.53	7.77	3.67	3.40	5.04	4.50	2.00	1.14	0.897
In.	0.94	0.98	2.12	11.0	8.09	4.23	3.79	5.82	5.02	2.30	1.32	1.00
Ac-ft	49,700	52,010	112,100	582,600	428,900	224,400	201,100	308,500	265,900	122,000	69,820	53,080

Calendar year 1952: Max 19,000 Min 775 Mean 3,040 Cfsm 3.06 In. 41.63 Ac-ft 2,207,000
Water year 1952-53: Max 43,200 Min 792 Mean 3,412 Cfsm 3.43 In. 46.61 Ac-ft 2,470,000

Peak discharge (base, 12,000 cfs).--Jan. 9 (5:30 p.m.) 18,200 cfs (7.38 ft); Jan. 13 (9 p.m.) 12,500 cfs (6.25 ft); Jan. 18 (10 p.m.) 62,600 cfs (12.46 ft); Feb. 3 (6:30 p.m.) 26,500 cfs (8.66 ft); Feb. 6 (7 to 9 a.m.) 23,600 cfs (8.25 ft).
* Discharge measurement made on this day.

Fall Creek below Winberry Creek, near Fall Creek, Oreg.

Location.--Lat 43°56'40", long. 122°46'30", near center of sec. 2, T. 19 S., R. 1 W., on left bank 10 ft upstream from highway bridge, 1½ miles downstream from Winberry Creek, 2½ miles southeast of Fall Creek, and 5 miles above mouth.

Drainage area.--186 sq mi.

Records available.--October to December 1911 (gage heights only), September 1935 to September 1953. Published as "Big Fall Creek near Fall Creek" 1911.

Gage.--Water-stage recorder. Datum of gage is 637.80 ft above mean sea level, datum of 1929. Oct. 1 to Dec. 31, 1911, staff gage at site a quarter of a mile downstream at different datum. Sept. 9, 1935, to Aug. 2, 1950, staff gage at present site and datum.

Average discharge.--18 years, 562 cfs.

Extremes.--Maximum discharge during year, 12,200 cfs Jan. 18 (gage height, 13.41 ft), from rating curve extended above 6,500 cfs by logarithmic plotting; minimum, 21 cfs Nov. 25 (gage height, 1.01 ft).
1935-53: Maximum discharge, 22,500 cfs Dec. 28, 1945 (gage height, 18.0 ft, from floodmark), from rating curve extended above 6,500 cfs by logarithmic plotting; minimum observed, 19 cfs Dec. 1, 1936.

Remarks.--Records good. No diversion above station. Records of water temperatures for the water year 1953 are given in WSP 1293.

Revisions (water years).--WSP 1094: 1946(M). WSP 1248: Drainage area.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Feb. 3				Feb. 4 to Sept. 30			
1.0	20	4.0	955	1.1	36	4.0	1,030
1.2	43	5.0	1,540	1.5	99	6.0	2,420
1.5	92	7.0	3,180	2.0	204	8.0	4,220
2.0	200	10.0	6,700	2.5	346	10.0	6,700
2.5	330	13.0	11,400	3.0	530		
3.0	500						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	29	38	58	430	1,920	610	750	976	630	180	68	66
2	29	37	149	1,640	2,320	518	655	916	*546	168	66	63
3	29	29	190	885	6,410	474	586	760	474	162	66	58
4	28	28	181	604	4,100	430	542	640	426	155	68	55
5	27	27	250	465	4,380	403	534	574	407	149	74	52
6	27	25	220	388	5,600	383	522	526	590	142	74	63
7	27	25	982	423	3,710	383	518	550	1,520	136	71	60
8	27	25	692	800	3,470	462	478	660	1,710	*128	66	56
9	27	25	412	2,840	2,190	486	434	860	1,310	123	64	52
10	27	25	1,340	1,970	1,510	466	407	835	1,020	119	61	50
11	27	33	982	1,240	1,120	*450	414	705	810	115	58	49
12	27	60	1,070	1,670	875	615	466	590	685	110	55	47
13	27	90	700	2,220	715	620	590	518	586	108	52	47
14	26	*107	504	1,690	645	598	785	566	506	108	50	44
15	25	103	378	1,170	602	566	685	562	446	106	52	44
16	24	56	290	2,240	690	660	685	530	400	99	55	43
17	24	43	*242	4,000	2,470	810	715	474	364	99	50	*40
18	25	37	208	10,900	2,380	885	620	478	334	94	*43	40
19	25	36	188	4,500	1,510	1,100	578	1,420	316	89	50	42
20	26	34	200	3,490	1,110	1,350	582	1,810	313	87	50	42
21	26	32	248	2,590	885	1,390	574	1,600	280	85	50	42
22	26	30	430	1,810	785	2,540	554	1,380	258	84	50	43
23	27	30	430	1,400	675	2,580	522	1,430	241	82	50	44
24	36	29	315	1,080	610	2,560	442	1,870	227	82	58	44
25	37	29	258	960	558	2,500	407	1,360	220	80	63	42
26	30	29	222	977	550	1,720	422	1,190	209	79	182	40
27	28	30	208	885	598	1,260	570	1,650	202	76	140	42
28	27	29	193	*950	670	1,070	870	1,430	204	74	92	66
29	27	30	210	1,380	-	880	*735	1,130	204	72	132	80
30	29	32	448	1,390	-	820	850	910	194	71	96	63
31	32	-	381	1,460	-	880	-	760	-	69	74	-
Total	858	1,183	12,579	58,447	53,058	30,469	17,492	29,660	15,632	3,331	2,186	1,519
Mean	27.7	39.4	406	1,885	1,895	983	583	957	521	107	70.5	50.6
Cfsm	0.149	0.212	2.18	10.1	10.2	5.28	3.13	5.15	2.80	0.575	0.379	0.272
In.	0.17	0.24	2.52	11.69	10.61	6.09	3.50	5.93	3.13	0.67	0.44	0.30
Ac-ft	1,700	2,350	24,950	115,900	105,200	60,430	34,690	58,830	31,010	6,610	4,340	3,010

Calendar year 1952: Max 6,920 Min 24 Mean 425 Cfsm 2.28 In. 31.15 Ac-ft 308,900
Water year 1952-53: Max 10,900 Min 24 Mean 620 Cfsm 3.33 In. 45.29 Ac-ft 449,000

Peak discharge (base, 3,100 cfs).--Jan. 9 (8 a.m.) 4,200 cfs (7.98 ft); Jan. 18 (4:30 p.m.) 12,200 cfs (13.41 ft); Feb. 3 (2 p.m.) 8,230 cfs (11.08 ft); Feb. 6 (1 a.m.) 7,900 cfs (10.86 ft); Feb. 17 (9 p.m.) 3,300 cfs (7.04 ft).

* Discharge measurement made on this day.

Coast Fork Willamette River at London, Oreg.

Location.--Lat 43°38'30", long. 123°05'10", in SW¼ sec. 20, T. 22 S., R. 3 W., on left bank 0.6 mile north of London and 11 miles south of Cottage Grove.

Drainage area.--69 sq mi, approximately.

Records available.--September 1935 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 852.58 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Oct. 17, 1935, staff gage at same site and datum.

Average discharge.--18 years, 203 cfs.

Extremes.--Maximum discharge during year, 6,110 cfs Jan. 18 (gage height, 10.78 ft); minimum, 13 cfs Oct. 7, 17.
1935-53: Maximum discharge, 8,800 cfs Dec. 28, 1945 (gage height, 13.25 ft), from rating curve extended above 4,000 cfs; minimum, 10 cfs for several days in 1936, 1938-40.

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No diversion above station; millpond 3 miles above station may cause slight regulation at times.

Rating table, water year 1952-53, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.1	14	3.0	490
1.3	26	4.0	975
1.5	45	6.0	2,130
1.7	73	8.0	3,590
2.0	135	10.0	5,340
2.5	290		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	20	65	211	458	214	266	376	234	67	29	*24
2	15	20	154	346	548	190	241	332	202	64	28	22
3	15	20	114	280	1,440	175	227	272	178	61	28	21
4	14	20	184	214	1,120	160	*205	230	160	60	30	20
5	14	19	308	175	1,010	150	199	199	166	57	31	20
6	14	18	272	*152	1,230	a150	193	181	248	54	31	24
7	14	18	1,070	285	950	a160	181	199	450	53	30	22
8	14	19	725	*580	905	a160	166	258	490	49	28	21
9	15	19	392	1,400	650	a170	152	328	384	48	26	20
10	15	21	817	755	499	a180	142	304	325	48	26	19
11	15	28	526	526	396	a210	a130	255	269	45	24	18
12	14	46	418	811	336	a360	a130	211	230	45	23	18
13	*14	58	318	1,180	290	a320	a135	181	202	44	23	18
14	14	72	248	*795	276	a280	a135	196	175	44	22	17
15	14	61	193	517	269	a250	a130	*178	*160	42	23	17
16	14	27	150	879	308	a300	a140	160	142	41	23	17
17	14	*22	126	1,740	912	a380	a178	150	130	41	23	17
18	16	20	106	4,700	955	a440	166	163	119	40	22	17
19	17	19	99	1,940	*616	a550	155	392	117	38	21	16
20	16	18	99	1,930	476	a850	152	427	108	37	22	17
21	16	18	119	1,260	384	a850	150	522	99	36	23	17
22	16	17	178	815	339	a950	145	472	93	*37	21	18
23	18	17	148	584	300	a900	a135	594	86	36	22	18
24	29	b17	124	458	272	855	a130	680	84	35	23	17
25	21	b16	106	530	248	850	a120	512	80	34	26	17
26	18	b16	104	780	234	607	a140	607	78	33	66	16
27	17	b15	106	612	227	468	339	620	75	32	43	17
28	17	b15	95	512	234	414	409	504	75	31	32	27
29	18	b15	117	517	-	360	332	400	75	31	40	23
30	19	b18	248	476	-	325	332	325	75	31	31	36
31	20	-	208	463	-	297	-	276	-	30	27	-
Total	502	719	7,937	26,423	15,882	12,525	5,655	10,504	5,309	1,344	867	591
Mean	16.2	24.0	256	852	567	404	188	339	177	43.4	28.0	19.7
Cfsm	0.235	0.348	3.71	12.3	8.22	5.86	2.72	4.91	2.56	0.629	0.406	0.286
In.	0.27	0.39	4.28	14.24	8.56	6.75	3.05	5.66	2.86	0.72	0.47	0.32
Ac-ft	996	1,430	15,740	52,410	31,500	24,840	11,220	20,830	10,530	2,670	1,720	1,170

Calendar year 1952: Max 1,640 Min 14 Mean 173 Cfsm 2.51 In. 34.08 Ac-ft 125,500
Water year 1952-53: Max 4,700 Min 14 Mean 242 Cfsm 3.51 In. 47.57 Ac-ft 175,100

Peak discharge (base, 1,900 cfs).--Jan. 9 (6 a.m.) 1,970 cfs (5.73 ft); Jan. 18 (2 p.m.) 6,110 cfs (10.78 ft); Feb. 3 (2 p.m.) 1,950 cfs (5.70 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records, recorded range in stage, and records for Mosby Creek at mouth, near Cottage Grove.

b Stage-discharge relation affected by ice.

Cottage Grove Reservoir near Cottage Grove, Oreg.

Location.--Lat 43°43', long. 123°03', in NE¼ sec. 28, T. 21 S., R. 3 W., in east abutment of dam on Coast Fork Willamette River, 5½ miles south of Cottage Grove.

Drainage area.--104 sq mi.

Records available.--October 1942 to September 1953.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (surveys by Corps of Engineers).

Extremes.--Maximum contents during year, 32,170 acre-ft May 24, June 6 (elevation, 790.20 ft); minimum, 2,690 acre-ft Dec. 11 (elevation, 748.77 ft).
1942-53: Maximum contents, 34,750 acre-ft May 3, 1949 (elevation, 792.42 ft); minimum since first filling, about 580 acre-ft Nov. 13, 1950 (elevation, about 738.2 ft), from graph based on records of inflow and outflow.

Remarks.--Reservoir is formed by earth-fill dam with concrete spillway completed by Corps of Engineers in 1942; storage began Oct. 31, 1942 (slight pondage at times in water year 1941-42, when inflow temporarily exceeded 2,600 cfs, capacity of outlets). Capacity, 33,090 acre-ft between elevations 719.0 ft (outlet conduit) and 791.0 ft (crest of spillway). Dead storage negligible. Reservoir used for flood control and improvement of navigation below Albany.

Cooperation.--Gage readings furnished and recorder inspected by Corps of Engineers.

Revisions (water years).--WSP 1218: 1950.

Contents at 12 p.m., in acre-feet, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14,620	3,210	2,960	3,110	3,130	12,470	23,220	31,780	31,960	31,950	31,440	24,370
2	14,360	3,150	3,080	3,090	3,660	12,840	23,650	31,940	31,910	31,920	31,330	24,130
3	14,080	3,080	2,980	3,030	4,920	13,190	24,020	31,940	31,940	31,920	31,090	23,880
4	13,750	3,040	3,040	3,030	4,140	13,540	24,360	31,760	31,990	31,940	30,870	23,610
5	13,460	3,010	3,090	3,020	4,210	13,820	24,690	31,670	32,100	31,960	30,530	23,360
6	13,160	2,990	3,760	3,040	4,440	14,090	24,990	31,670	32,050	31,990	30,420	23,110
7	12,870	2,960	3,700	3,000	4,380	14,340	25,270	31,730	32,000	32,000	30,190	22,790
8	12,590	2,930	3,130	3,090	5,040	14,620	25,530	31,780	31,890	32,000	29,940	22,440
9	12,300	2,910	2,990	3,440	5,330	14,900	25,720	31,790	31,920	31,990	29,700	22,100
10	12,020	2,880	3,050	3,070	5,810	15,240	25,970	31,890	31,950	31,990	29,400	21,700
11	11,470	2,860	2,750	3,120	6,350	15,590	26,250	31,970	32,020	31,960	29,210	21,280
12	10,770	2,880	3,020	3,300	6,680	16,190	26,540	31,970	32,000	31,940	28,950	20,810
13	10,090	2,940	3,070	3,300	6,960	16,650	26,790	31,990	31,960	31,920	28,710	20,370
14	9,380	3,020	3,030	3,070	7,260	17,070	27,040	32,050	31,970	31,930	28,440	19,910
15	8,680	3,030	3,020	3,220	7,610	17,380	27,280	32,050	31,990	31,920	28,200	19,440
16	7,970	3,010	3,020	3,280	8,140	17,760	27,600	32,020	31,990	31,910	27,950	18,950
17	7,260	3,010	3,010	3,940	8,450	17,980	27,970	31,970	31,960	31,910	27,700	18,500
18	6,700	3,000	3,030	15,160	8,710	18,450	28,320	32,050	31,970	31,880	27,430	18,030
19	6,230	3,000	3,030	19,910	9,140	19,260	28,640	31,930	31,990	31,850	27,190	17,550
20	5,750	2,990	3,030	22,070	9,550	19,690	28,950	31,970	31,970	31,830	27,010	17,060
21	5,240	2,980	3,100	20,940	9,820	19,720	29,240	32,010	31,940	31,800	26,750	16,570
22	4,760	2,960	3,130	18,160	10,150	19,840	29,530	31,920	31,940	31,800	26,490	16,100
23	4,320	2,950	3,070	14,690	10,450	19,940	29,780	32,110	31,970	31,770	26,250	15,670
24	4,070	2,930	3,070	10,750	10,760	20,360	29,970	31,950	32,010	31,750	26,000	15,200
25	3,900	2,910	3,070	7,470	11,190	20,710	30,180	31,850	32,030	31,710	25,810	14,670
26	3,730	2,900	3,080	4,890	11,630	20,740	30,520	32,010	32,050	31,680	25,670	14,190
27	3,570	2,880	3,100	3,110	12,020	21,230	31,320	31,990	32,050	31,640	25,470	13,730
28	3,460	2,870	3,090	3,090	12,210	21,860	31,800	31,880	32,050	31,610	25,270	13,280
29	3,400	2,860	3,130	3,140	-	22,120	31,850	31,930	32,040	31,590	25,080	12,820
30	3,340	2,860	3,190	3,060	-	22,410	31,940	31,990	32,000	31,530	24,850	12,480
31	3,270	-	3,100	3,040	-	22,810	-	32,020	-	31,490	24,630	-

Monthly elevation and contents, water year October 1952 to September 1953.

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept. 30	772.21	14,910	-
Oct. 31	750.78	3,270	-11,640
Nov. 30	749.37	2,860	-410
Dec. 31	750.21	3,100	+240
Calendar year 1952	-	-	+40
Jan. 31	750.00	3,040	-60
Feb. 28	768.48	12,210	+9,170
Mar. 31	781.33	22,810	+10,600
Apr. 30	790.00	31,940	+9,130
May 31	790.07	32,020	+80
June 30	790.05	32,000	-20
July 31	789.60	31,490	-510
Aug. 31	783.18	24,630	-6,860
Sept. 30	768.88	12,480	-12,150
Water year 1952-53	-	-	-2,430

† Elevation at 12 p.m.

Coast Fork Willamette River below Cottage Grove Dam, Oreg.

Location.--Lat 43°43'00", long. 123°03'10", in NE¼ sec. 28, T. 21 S., R. 3 W., on right bank at bridge a quarter of a mile downstream from Cottage Grove Dam and 5½ miles south of Cottage Grove.

Drainage area.--104 sq mi.

Records available.--January 1939 to September 1953. Prior to October 1944, published as "near Cottage Grove."

Gage.--Water-stage recorder. Datum of gage is 711.00 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark). Jan. 1 to Feb. 13, 1939, staff gage at site three-quarters of a mile downstream at different datum. Feb. 14, 1939, to Oct. 12, 1939, staff gage at site 0.8 mile downstream at datum 15.82 ft lower. Oct. 13, 1939, to Sept. 30, 1944, water-stage recorder at site 0.8 mile downstream at datum 15.93 ft lower.

Average discharge.--14 years, 282 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 2,650 cfs Jan. 24 (gage height, 8.41 ft); minimum, 20 cfs Nov. 25-30 (gage height, 2.49 ft).
1939-53: Maximum discharge recorded, 3,340 cfs Jan. 4, 1943 (gage height, 10.06 ft, site and datum then in use); practically no flow July 5-7, 1945, Aug. 24, 1947.

Remarks.--Records excellent. No diversion above station. Flow regulated since Oct. 31, 1942, by Cottage Grove Reservoir (see preceding page).

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

2.4	15	4.0	290
2.7	33	5.0	690
3.0	66	8.5	2,700
3.5	157		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	142	63	22	275	537	140	159	442	324	112	45	*140
2	140	62	150	438	482	65	103	498	281	102	65	142
3	144	62	200	372	1,390	57	102	330	212	76	142	142
4	149	38	160	272	1,960	56	*102	215	180	61	142	142
5	149	30	350	233	1,380	56	102	215	178	61	144	142
6	149	29	360	*195	1,570	56	102	236	320	61	144	142
7	149	28	1,180	379	1,240	56	102	293	573	61	142	173
8	149	28	1,500	681	1,180	46	102	362	650	61	142	198
9	146	29	668	1,560	795	41	102	402	482	61	142	195
10	146	29	1,140	1,250	446	41	68	406	380	61	142	195
11	265	29	894	710	284	41	53	341	296	61	142	222
12	348	29	397	1,030	287	41	53	254	293	57	142	254
13	352	29	372	1,670	245	69	53	218	263	50	142	251
14	*355	30	424	1,260	230	93	53	218	208	50	142	248
15	352	51	242	645	180	95	52	*218	*182	50	142	248
16	348	43	190	1,170	155	151	50	215	182	45	142	248
17	344	*27	162	1,900	908	272	50	205	168	41	142	248
18	281	24	124	494	1,200	275	50	188	144	46	142	245
19	239	23	124	515	*652	372	50	528	144	46	142	245
20	242	23	124	1,460	446	862	50	482	144	46	142	245
21	242	23	124	2,240	386	1,190	50	672	144	46	142	248
22	242	23	190	2,450	275	1,360	51	668	109	*46	140	254
23	236	25	218	2,470	230	1,140	51	705	95	46	140	251
24	151	28	164	2,530	200	960	51	990	95	46	140	251
25	102	25	142	2,460	109	965	51	735	95	48	142	248
26	102	21	124	2,390	88	824	52	725	95	46	142	248
27	103	20	124	1,810	88	378	52	830	95	45	142	248
28	68	20	124	720	199	275	267	705	105	45	144	251
29	62	20	124	663	-	324	394	506	112	45	142	257
30	62	21	243	663	-	301	366	376	112	45	142	257
31	63	-	302	586	-	198	-	324	-	49	142	-
Total	6,022	932	10,662	35,491	17,142	10,800	2,943	13,502	6,661	1,716	4,228	6,578
Mean	194	31.1	344	1,145	612	348	98.1	436	222	55.4	136	219
Ac-ft	11,940	1,850	21,150	70,400	34,000	21,420	5,840	26,780	13,210	3,400	8,390	13,050

Adjusted for change in contents in Cottage Grove Reservoir

Mean	4.87	24.2	354	1,144	777	521	252	437	222	47.0	24.9	15.1
Cfsm	0.047	0.233	3.40	11.0	7.47	5.01	2.42	4.20	2.13	0.452	0.239	0.145
In.	0.05	0.26	3.86	12.68	7.78	5.77	2.72	4.84	2.38	0.52	0.28	0.16
Ac-ft	300	1,440	21,390	70,340	43,170	32,020	14,970	26,860	13,190	2,890	1,530	900

Observed

Calendar year 1952:	Max	2,210	Min	20	Mean	228	Ac-ft 165,200
Water year 1952-53:	Max	2,530	Min	20	Mean	320	Ac-ft 231,400

Adjusted

Calendar year 1952:	Mean	228	Cfsm	2.19	In.	29.80	Ac-ft 165,200
Water year 1952-53:	Mean	316	Cfsm	3.04	In.	41.30	Ac-ft 229,000

* Discharge measurement made on this day.

Row River above Pitcher Creek, near Dorena, Oreg.

Location.--Lat 43°44'10", long. 122°52'20", in NE¼ sec. 24, T. 21 S., R. 2 W., on right bank half a mile above Pitcher Creek and 1½ miles northwest of Dorena.

Drainage area.--211 sq mi.

Records available.--September 1935 to September 1953. Prior to October 1949, published as "at Star."

Gage.--Water-stage recorder. Datum of gage is 856.16 ft above mean sea level, datum of 1929. Prior to Oct. 18, 1938, staff gage read once or twice daily at site 450 ft upstream at datum 1 ft higher.

Average discharge.--18 years, 587 cfs.

Extremes.--Maximum discharge during year, 16,200 cfs Jan. 18 (gage height, 12.83 ft), from rating curve extended above 9,300 cfs by logarithmic plotting; minimum, 12 cfs Nov. 29 (gage height, 1.48 ft).
1935-53: Maximum discharge, 19,600 cfs Dec. 28, 1945 (gage height, 14.33 ft), from rating curve extended above 9,300 cfs by logarithmic plotting; minimum, 10 cfs Sept. 24, 25, 1951.

Remarks.--Records good. No diversion above station; possibly slight regulation at times by log ponds.

Cooperation.--Gage-height record collected in cooperation with U. S. Weather Bureau and Corps of Engineers.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
1.4	12	4.0	535	1.6	22	3.0	195
1.7	30	5.0	1,080	1.9	43	3.5	330
2.0	58	6.0	1,880	2.2	71	4.0	520
2.5	119	7.0	3,000	2.5	110	5.0	1,080
3.0	205	9.0	6,170				
3.5	345	12.0	13,500				

Note.--Same as preceding table above 5.0 ft.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23	22	66	446	1,930	685	680	978	665	165	48	42
2	23	22	200	1,160	2,350	555	*610	906	575	158	49	*40
3	23	22	178	828	6,190	471	595	732	484	158	51	38
4	23	21	301	595	4,040	427	595	665	431	153	51	35
5	22	20	470	*490	3,770	403	625	680	415	145	50	35
6	21	19	309	410	4,870	395	590	640	720	140	51	55
7	22	19	1,750	801	3,440	407	520	635	2,090	134	49	51
8	22	20	964	2,260	3,640	600	451	690	2,070	122	48	39
9	22	20	508	*6,060	2,180	660	407	1,010	1,430	112	44	36
10	23	19	2,040	2,800	1,440	615	367	1,090	1,070	104	41	35
11	24	21	1,420	1,590	1,060	570	351	930	870	96	40	32
12	24	32	1,500	2,480	834	906	360	768	744	92	37	34
13	23	80	1,060	3,360	675	744	370	*655	635	86	35	30
14	22	79	775	2,150	620	660	411	650	555	83	32	30
15	*22	75	576	1,260	560	600	407	625	484	81	40	29
16	20	38	422	1,930	580	655	520	565	*431	73	42	28
17	19	28	327	4,090	1,980	768	645	502	399	71	36	28
18	19	*25	255	12,000	*2,050	852	600	511	370	70	34	27
19	20	22	212	5,310	1,300	1,120	610	1,750	330	69	33	27
20	20	22	205	5,090	972	1,160	750	1,900	303	65	32	27
21	19	22	220	3,300	768	1,150	786	1,700	267	63	33	27
22	20	19	348	1,910	685	1,780	762	1,510	254	61	33	28
23	20	20	357	1,330	615	2,130	695	1,570	238	59	32	28
24	23	18	273	1,010	565	2,570	540	1,970	216	*58	34	28
25	25	18	222	966	516	2,250	502	1,410	206	56	36	27
26	23	17	193	1,180	550	1,490	545	1,840	200	56	149	27
27	21	17	210	1,010	680	1,130	840	1,880	191	56	128	26
28	19	16	181	972	804	1,010	1,070	1,550	189	53	71	33
29	19	15	222	1,510	-	852	834	1,210	184	50	76	48
30	21	16	590	1,520	-	774	924	972	178	48	64	39
31	21	-	470	1,550	-	792	-	786	-	47	50	-
Total	668	804	16,824	71,368	49,664	29,181	17,962	33,280	17,194	2,784	1,549	1,009
Mean	21.5	26.8	543	2,302	1,774	941	599	1,074	573	89.8	50.0	33.6
Cfsm	0.102	0.127	2.57	10.9	8.41	4.46	2.84	5.09	2.72	0.426	0.237	0.159
In.	0.12	0.14	2.97	12.58	8.75	5.14	3.17	5.87	3.03	0.49	0.27	0.18
Ac-ft	1,320	1,590	33,370	141,600	98,510	57,880	35,630	66,010	34,100	5,520	3,070	2,000

Calendar year 1952: Max 9,070 Min 15 Mean 508 Cfsm 2.41 In. 32.76 Ac-ft 368,700
Water year 1952-53: Max 12,000 Min 15 Mean 664 Cfsm 3.15 In. 42.71 Ac-ft 480,600

Peak discharge (base, 4,800 cfs).--Jan. 9 (7:30 a.m.) 8,640 cfs (10.14 ft); Jan. 18 (3:30 p.m.) 16,200 cfs (12.83 ft); Feb. 3 (1 p.m.) 7,720 cfs (9.75 ft); Feb. 6 (2 a.m.) 5,970 cfs (8.89 ft).
* Discharge measurement made on this day.

Dorena Reservoir near Cottage Grove, Oreg.

Location.--Lat 43°47', long. 122°57', in SE¼ sec. 32, T. 20 S., R. 2 W., on left side of dam in concrete shelter over 42-inch circular well in concrete portion of dam on Row River, 5 miles east of Cottage Grove.

Drainage area.--265 sq mi.

Records available.--October 1949 to September 1953.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

Extremes.--Maximum contents during year, 76,210 acre-ft May 27 (elevation, 834.31 ft); minimum, 6,760 acre-ft Jan. 3 (elevation, 770.06 ft).
1949-53: Maximum contents, that of May 27, 1953; minimum since first filling, 5,660 acre-ft Dec. 20, 1951 (elevation, 767.75 ft).

Remarks.--Reservoir is formed by earth-fill dam with concrete outlet and spillway, completed in 1949 by Corps of Engineers; storage began Oct. 11, 1949; capacity, 77,510 acre-ft between elevation 739.0 ft (sill of outlet gates) and 835.0 ft (crest of spillway). Dead storage of 8 acre-ft below elevation 739.0 ft. Reservoir used for flood control and improvement of navigation. Capacity table computed by Corps of Engineers.

Cooperation.--Water-stage recorder inspected by Corps of Engineers.

Contents at 12 p.m., in acre-feet, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	29,370	7,620	7,020	7,200	7,540	23,960	42,900	61,020	75,630	72,100	69,240	42,680
2	28,680	7,440	7,330	7,060	8,140	24,800	43,310	61,390	75,550	72,020	68,600	41,340
3	27,990	7,260	7,230	6,890	15,840	25,320	43,950	62,230	75,550	71,950	67,650	39,970
4	26,970	7,130	7,250	7,240	16,240	25,990	44,680	63,010	75,380	71,910	66,660	38,630
5	25,850	7,110	7,290	7,410	15,880	26,580	45,450	63,490	74,950	71,880	65,640	37,380
6	24,760	7,090	7,240	7,310	18,410	27,110	46,150	63,740	74,860	71,860	65,040	36,110
7	23,630	7,060	8,010	7,170	17,440	27,840	46,780	64,280	75,590	71,840	64,700	35,030
8	22,530	7,040	7,280	8,680	16,910	28,800	47,200	65,280	74,600	71,840	64,380	34,010
9	21,450	7,010	7,080	14,120	13,710	29,830	47,550	66,090	72,920	71,820	64,010	32,980
10	20,410	7,000	7,910	11,150	12,830	30,580	47,970	66,690	72,230	71,800	63,290	31,960
11	19,380	7,000	7,370	7,210	13,150	31,040	48,500	66,850	72,080	71,770	62,260	31,060
12	18,390	7,050	7,290	7,760	13,580	31,420	49,070	67,180	72,060	71,730	61,260	30,220
13	17,390	7,220	7,060	7,300	14,240	31,800	49,670	67,810	71,950	71,690	60,250	29,400
14	16,390	7,290	7,050	6,900	15,120	32,250	50,350	68,560	71,750	71,640	59,210	28,560
15	15,380	7,230	6,990	6,970	15,840	32,660	51,050	69,260	71,680	71,580	58,210	27,740
16	14,390	7,060	7,030	8,070	16,610	33,480	51,900	69,850	71,710	71,550	57,220	26,920
17	13,670	6,960	7,000	9,580	18,190	34,320	53,000	70,300	71,820	71,480	56,220	26,070
18	13,100	6,960	6,990	36,120	17,750	35,120	53,980	71,070	71,930	71,400	55,200	25,200
19	12,520	6,960	7,030	46,170	17,850	36,030	54,960	72,450	72,020	71,350	54,190	24,330
20	11,980	6,960	7,110	51,420	18,810	36,950	55,930	72,850	72,010	71,240	53,250	23,490
21	11,400	6,960	7,160	50,340	19,620	37,520	56,540	73,570	71,910	71,170	52,230	22,800
22	10,770	6,950	7,210	45,370	20,280	38,540	56,710	74,260	71,820	71,020	51,320	22,330
23	10,270	6,940	7,180	39,030	20,700	39,450	56,590	75,250	71,820	70,910	50,340	21,850
24	9,730	6,930	7,060	32,140	21,350	40,740	56,490	75,970	71,900	70,770	49,380	21,380
25	9,310	6,910	7,050	25,170	21,980	40,560	57,110	75,670	71,950	70,640	48,510	20,900
26	8,960	6,900	7,140	18,830	22,630	39,840	58,090	76,040	72,000	70,510	47,870	20,440
27	8,610	6,880	7,170	14,560	23,320	40,030	58,950	76,040	72,020	70,390	47,170	20,000
28	8,340	6,860	7,090	10,050	23,690	40,510	59,140	75,520	72,100	70,260	46,380	19,610
29	8,160	6,850	7,090	7,560	-	41,080	59,490	75,360	72,100	70,100	45,560	19,190
30	7,980	6,880	7,050	7,170	-	41,830	60,500	75,610	72,100	69,940	44,720	18,890
31	7,800	-	7,100	7,140	-	42,530	-	75,700	-	69,740	43,840	-

Monthly elevation and contents, water year October 1952 to September 1953

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	801.67	30,090	-
Oct. 31	772.10	7,800	-22,290
Nov. 30	770.31	6,880	-920
Dec. 31	770.75	7,100	+220
Calendar year 1952...	-	-	-760
Jan. 31	770.83	7,140	+40
Feb. 28	795.02	23,690	+16,550
Mar. 31	812.65	42,530	+18,840
Apr. 30	825.37	60,500	+17,970
May 31	834.04	75,700	+15,200
June 30	832.10	72,100	-3,600
July 31	830.80	69,740	-2,360
Aug. 31	813.70	43,840	-25,900
Sept.30	789.29	18,890	-24,950
Water year 1952-53...	-	-	-11,200

† Elevation at 12 p.m.

Row River near Cottage Grove, Oreg.

Location.--Lat 43°47'40", long. 122°59'40", in NE¼ sec. 36, T. 20 S., R. 3 W., on right bank 1½ miles upstream from Mosby Creek, 2 miles downstream from Dorena Dam, and 3 miles east of Cottage Grove.

Drainage area.--270 sq mi.

Records available.--January 1939 to September 1953. Prior to October 1947, published as "near Dorena."

Gage.--Water-stage recorder. Datum of gage is 685.24 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Oct. 13, 1939, staff gage at site 180 ft upstream at datum 1.00 ft higher.

Average discharge.--14 years, 748 cfs (adjusted for storage).

Extremes.--Maximum discharge during year, 5,070 cfs Jan. 20 (gage height, 8.31 ft); minimum, 29 cfs Nov. 29 (gage height, 1.45 ft).
1939-53: Maximum discharge, 21,400 cfs Dec. 28, 1945 (gage height, 18.20 ft); minimum, 6.7 cfs Oct. 1, 1949; minimum daily, 14 cfs Aug. 29 to Sept. 1, 1940.

Remarks.--Records excellent. No diversion above station. Flow regulated since October 1949 by Dorena Reservoir (see preceding page).

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.4	25	3.0	530
1.6	45	4.0	1,090
1.8	80	6.0	2,650
2.0	135	8.5	5,320
2.5	300		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	398	111	33	520	2,070	696	685	946	886	230	293	668
2	394	111	136	1,440	2,410	367	*575	934	756	230	372	*773
3	390	108	279	1,110	3,880	248	408	505	646	226	525	773
4	535	76	350	575	4,900	216	354	430	646	209	590	768
5	615	35	590	*520	4,840	216	354	565	817	195	590	762
6	605	35	470	560	4,690	216	354	646	1,000	183	386	756
7	610	35	1,890	988	4,960	206	354	510	2,180	171	223	652
8	600	36	1,770	1,700	4,930	198	354	440	3,000	159	226	600
9	590	37	855	4,130	4,480	234	354	845	2,600	150	220	595
10	585	40	2,250	4,890	2,390	344	258	1,080	1,660	141	410	590
11	570	43	2,050	3,990	1,210	460	209	1,040	1,150	135	560	520
12	550	45	1,830	2,660	839	850	209	746	970	135	560	475
13	570	46	1,380	4,240	516	734	209	*485	844	135	560	475
14	585	99	946	2,820	349	615	209	440	778	135	555	470
15	580	153	734	1,580	349	550	209	408	646	129	560	460
16	*580	162	515	1,810	354	445	209	385	*535	123	560	455
17	421	106	412	4,200	1,700	540	212	385	435	123	560	470
18	336	*37	328	1,530	*2,900	685	212	312	385	123	555	475
19	332	34	262	1,020	1,720	1,040	212	1,270	385	123	555	470
20	328	34	234	3,470	806	1,250	336	2,010	385	120	550	465
21	324	34	272	4,580	610	1,370	560	1,700	385	120	550	385
22	320	35	445	4,940	605	1,810	555	1,530	349	129	545	276
23	316	36	490	4,950	615	2,230	828	1,670	286	129	545	276
24	316	37	421	4,860	440	2,500	685	2,240	240	*129	545	272
25	244	37	320	4,840	380	2,900	293	1,990	226	129	540	272
26	209	37	216	4,820	380	2,350	216	2,170	226	126	540	268
27	209	37	251	3,630	505	1,370	609	2,550	226	126	540	268
28	168	37	276	*3,600	778	1,070	1,150	2,280	226	126	535	268
29	114	34	276	3,020	-	817	896	1,630	226	126	535	262
30	114	30	683	1,960	-	641	641	1,120	230	123	530	262
31	114	-	585	1,820	-	636	-	970	-	159	530	-
Total	12,622	1,737	21,549	86,773	54,606	27,804	12,709	34,232	23,324	4,597	15,345	14,481
Mean	407	57.9	695	2,799	1,950	897	424	1,104	777	148	495	483
Ac-ft	25,040	3,450	42,740	172,100	108,300	55,150	25,210	67,900	46,260	9,120	30,440	28,720

Adjusted for change in contents in Dorena Reservoir

Mean	44.7	42.5	699	2,799	2,247	1,203	726	1,351	717	110	73.8	63.4
Cfsm	0.166	0.157	2.59	10.4	8.32	4.46	2.69	5.00	2.66	0.407	0.273	0.235
In.	0.19	0.18	2.98	11.95	8.67	5.14	3.00	5.77	2.96	0.47	0.32	0.26
Ac-ft	2,750	2,530	42,960	172,100	124,800	73,990	43,180	83,100	42,660	6,760	4,540	3,770

Observed

Calendar year 1952: Max 4,890 Min 30 Mean 642 Ac-ft 466,200
Water year 1952-53: Max 4,960 Min 30 Mean 849 Ac-ft 614,400

Adjusted

Calendar year 1952: Mean 641 Cfsm 2.37 In. 32.33 Ac-ft 465,400
Water year 1952-53: Mean 833 Cfsm 3.09 In. 41.89 Ac-ft 603,200

* Discharge measurement made on this day.

Mosby Creek at mouth, near Cottage Grove, Oreg.

Location.--Lat 43°46'40", long. 123°00'10", in sec. 1, T. 21 S., R. 3 W., on left bank two-thirds of a mile upstream from mouth and 3½ miles southeast of Cottage Grove.

Drainage area.--96 sq mi, approximately.

Records available.--September 1946 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 676.62 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--7 years, 264 cfs.

Extremes.--Maximum discharge during year, 6,490 cfs Jan. 18 (gage height, 10.18 ft), from rating curve extended above 4,000 cfs by logarithmic plotting; minimum, 8.8 cfs Oct. 6, 7, 8, 15-18.

1946-53: Maximum discharge, 7,160 cfs Oct. 28, 1950 (gage height, 10.82 ft), from rating curve extended above 4,100 cfs by logarithmic plotting; minimum, 4 cfs Sept. 13-15, 1951.

Remarks.--Records good. Small diversions for irrigation above station.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
1.0	7.5	1.7	89	1.1	8.0	2.1	193
1.1	10	2.0	170	1.2	12	2.5	365
1.2	16	2.5	375	1.3	18	3.0	635
1.3	25	3.0	635	1.4	28	6.0	2,860
1.5	52	6.0	2,860	1.7	79	9.0	5,430

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.1	11	33	221	498	242	258	415	234	54	18	19
2	9.1	9.8	131	445	633	204	*223	360	190	50	17	*18
3	9.4	9.4	126	344	2,340	176	204	274	160	49	18	16
4	9.1	9.4	159	261	1,670	160	186	223	148	42	18	15
5	9.1	9.4	326	213	1,260	151	183	197	136	39	19	14
6	9.1	9.4	233	*174	1,440	145	167	176	226	38	19	16
7	9.1	9.4	1,120	310	1,170	136	157	180	536	38	19	16
8	9.1	9.4	866	788	1,410	151	139	223	665	34	20	16
9	9.1	9.4	490	*2,380	866	157	122	360	504	32	17	15
10	9.1	9.8	1,080	1,140	587	160	116	365	395	31	16	14
11	9.8	11	689	677	425	167	108	288	302	32	16	14
12	9.8	16	526	937	320	375	108	230	246	32	16	14
13	9.8	43	375	1,500	262	330	114	*190	208	32	14	13
14	9.4	46	269	1,020	238	288	114	190	176	27	12	12
15	*8.8	49	202	593	226	250	108	180	151	26	13	12
16	8.8	26	148	872	250	274	119	167	*133	25	14	12
17	8.8	18	115	1,740	1,000	370	154	154	119	25	14	12
18	8.8	*14	96	5,120	*1,290	435	160	154	108	23	13	12
19	9.1	13	87	2,590	788	671	145	445	101	22	13	12
20	9.1	12	87	2,370	553	944	148	548	93	22	13	12
21	9.1	12	100	1,590	420	950	148	635	86	21	14	12
22	9.1	12	170	898	345	1,120	145	593	79	*20	14	12
23	9.4	11	170	587	310	1,010	136	755	73	19	14	14
24	11	11	136	435	274	924	114	992	67	19	14	14
25	10	11	112	482	250	911	103	725	65	19	15	14
26	10	11	96	866	242	677	125	872	63	18	38	13
27	10	11	96	755	254	492	302	928	59	18	47	11
28	9.8	10	85	575	266	410	430	701	59	18	29	14
29	9.8	10	98	575	-	345	335	504	59	18	28	18
30	9.8	11	253	520	-	302	355	375	59	18	25	18
31	10	-	241	465	-	288	-	288	-	18	21	-
Total	291.5	454.4	8,715	31,443	19,587	13,215	5,226	12,687	5,500	879	578	424
Mean	9.40	15.1	281	1,014	700	426	174	409	183	28.4	18.6	14.1
Cfsm	0.098	0.157	2.93	10.6	7.29	4.44	1.81	4.26	1.91	0.296	0.194	0.147
In.	0.11	0.18	3.38	12.18	7.59	5.12	2.02	4.91	2.13	0.34	0.22	0.16
Ac-ft	578	901	17,290	62,370	38,850	26,210	10,370	25,180	10,910	1,740	1,150	841

Calendar year 1952: Max 3,010 Min 8.8 Mean 189 Cfsm 1.97 In. 26.76 Ac-ft 137,000
Water year 1952-53: Max 5,120 Min 8.8 Mean 271 Cfsm 2.82 In. 38.34 Ac-ft 196,400

Peak discharge (base, 2,500 cfs).--Jan. 9 (7:30 a.m.) 2,680 cfs (5.78 ft); Jan. 18 (5 p.m.) 6,490 cfs (10.18 ft); Feb. 3 (4 p.m.) 3,020 cfs (6.20 ft).

* Discharge measurement made on this day.

Coast Fork Willamette River near Goshen, Oreg.

Location.--Lat 43°58'40", long. 122°58'00", in NW¼ sec. 29, T. 18 S., R. 2 W., on right bank at downstream side of highway bridge, 2.5 miles east of Goshen and 6½ miles above confluence with Middle Fork Willamette River.

Drainage area.--642 sq mi.

Records available.--August 1905 to February 1912, October 1950 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 473.80 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Feb. 7, 1912, staff gage at site 600 ft upstream at different datum.

Average discharge.--9 years (1905-11, 1950-53), 1,793 cfs.

Extremes.--Maximum discharge during year, 17,800 cfs Jan. 18 (gage height, 13.85 ft); minimum, 86 cfs Nov. 27-30 (gage height, 2.03 ft).
1905-12, 1950-53: Maximum discharge, 58,500 cfs Nov. 22, 1909 (gage height, 19.5 ft, from graph based on gage readings), from rating curve extended above 15,000 cfs by logarithmic plotting, site and datum then in use; minimum, 36 cfs Sept. 29, 30, Oct. 11, 12, 1908.

Remarks.--Records good. Flow regulated by Cottage Grove Reservoir (see p. 125), and Dorena Reservoir (see p. 128). Only small diversions above station.

Revisions.--WSP 1218: Drainage area. WSP 1248: 1905-12.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 7-10, May 29 to June 7, Aug. 24 to Sept. 2)

Oct. 1 to Dec. 10				Dec. 11 to Sept. 30			
2.0	80	4.0	1,310	2.2	145	6.0	3,400
2.2	130	6.0	3,150	2.5	275	9.0	7,610
2.5	240	9.0	7,300	3.0	600	12.0	13,300
3.0	545			4.0	1,450	13.0	15,600

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	531	182	98	1,680	3,840	1,830	1,720	2,330	*1,740	485	280	744
2	531	179	212	3,250	4,150	1,220	1,490	2,500	1,510	457	372	920
3	531	179	778	3,080	9,820	896	1,220	1,860	1,200	438	520	936
4	601	172	580	2,050	11,100	744	1,030	1,370	*1,080	420	720	936
5	734	130	1,500	1,630	9,840	704	984	1,340	1,170	390	744	928
6	734	98	1,430	1,520	9,640	680	960	1,430	1,700	372	672	936
7	734	92	4,300	2,030	9,350	648	952	1,440	3,080	324	372	904
8	741	90	6,790	4,160	9,880	624	920	1,500	4,860	*297	354	824
9	727	92	3,580	10,500	7,990	632	880	2,030	4,390	270	354	808
10	727	92	5,300	9,620	5,210	776	800	2,350	3,180	260	414	800
11	785	90	5,670	7,420	3,080	920	592	2,220	2,370	240	688	776
12	926	98	3,870	6,140	2,340	*1,600	600	1,860	1,970	235	688	752
13	934	115	3,100	10,100	1,990	1,740	592	1,330	1,830	220	688	744
14	966	144	2,260	8,000	1,570	1,440	584	1,220	1,560	184	672	736
15	958	212	1,880	4,600	1,590	1,360	560	1,160	1,390	173	672	752
16	*966	240	1,390	5,340	1,550	1,530	568	1,090	1,180	162	680	752
17	886	200	1,170	10,100	4,440	2,120	664	1,040	1,040	162	672	760
18	685	134	*912	15,100	8,270	2,240	656	952	872	170	672	776
19	594	96	832	8,990	5,250	3,040	616	2,100	840	176	672	776
20	580	*88	760	*11,100	3,050	5,030	672	3,390	832	184	672	784
21	580	92	848	10,700	2,510	5,760	912	3,690	800	180	672	776
22	573	92	1,260	10,200	2,120	5,900	1,150	3,430	744	173	672	592
23	573	90	1,500	9,500	2,060	5,980	1,320	3,870	608	173	680	576
24	545	94	1,220	8,990	1,750	5,550	1,190	5,080	520	176	664	568
25	399	94	1,050	9,210	1,430	6,140	736	4,550	478	189	664	568
26	334	94	792	10,100	1,260	5,140	576	4,250	471	159	696	568
27	323	88	808	9,010	1,300	3,420	1,270	5,280	464	166	728	584
28	312	86	816	5,690	1,600	2,630	*2,170	4,730	471	166	*696	608
29	208	86	880	*5,880	-	2,310	2,450	3,470	492	166	688	632
30	190	86	1,650	4,040	-	2,050	1,990	2,460	499	166	680	656
31	182	-	1,930	3,770	-	1,770	-	1,900	-	166	672	-
Total	19,090	3,625	59,166	213,500	127,980	76,424	30,824	77,222	43,341	7,499	19,090	22,472
Mean	616	121	1,909	6,887	4,571	2,465	1,027	2,491	1,445	242	616	749
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	37,860	7,190	117,400	423,500	253,800	151,600	61,140	153,200	85,970	14,870	37,860	44,570

Calendar year 1952: Max 12,200 Min 86 Mean 1,388 Cfsm 2.16 In. 29.44 Ac-ft 1,007,000
Water year 1952-53: Max 15,100 Min 86 Mean 1,918 Cfsm 2.99 In. 40.57 Ac-ft 1,389,000

* Discharge measurement made on this day.

Middle Fork Willamette River at Jasper, Oreg.

Location (revised).--Lat 43°59'50", long. 122°54'20", in SW¼SW¼ sec. 14, T. 18 S., R. 2 W., on downstream side of highway bridge at Jasper, 650 ft downstream from Hills Creek and 7½ miles southeast of Springfield.
Drainage area.--1,340 sq mi (revised).
Records available.--September 1905 to February 1912, July 1913 to March 1917, October 1952 to September 1953.
Gage.--Wire-weight gage. Datum of gage is 513.45 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. September 1905 to February 1912 and July 1913 to March 1917, staff gages at approximately same site at different datum.
Average discharge.--10 years (1905-11, 1913-16, 1952-53), 3,828 cfs.
Extremes.--Maximum discharge during year, 73,400 cfs Jan. 18 (gage height, 16.60 ft, from floodmark), from rating curve extended above 42,000 cfs; minimum, 666 cfs Nov. 8, 9 (gage height, 1.53 ft).
1905-12, 1913-17, 1952-53: Maximum discharge, 94,000 cfs (revised) Nov. 23, 1909 (gage height, 17.4 ft, datum then in use, from graph based on gage readings), from rating curve extended above 10,000 cfs by logarithmic plotting; minimum observed, 530 cfs Sept. 11-16, 21-27, Oct. 10-29, Nov. 9-13, 1907.
Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)
292	1910	Nov. 23, 1909	94,000	17.4
394	1914	Jan. 22, 1914	19,000	8.0
414	1915	Jan. 14, 1915	15,400	7.4
444	1916	Feb. 7, 1916	49,200	12.4

Remarks.--Records good except those for periods of no gage-height record, which are fair.
Revisions.--Revised figures of discharge, in cubic feet per second, for periods in the water years 1907-8, 1910-12, and 1914-16, superseding those published in WSP 312, 332, 370, 394, 414, and 444, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1907		1911		1914-Con.		1916	
Feb. 1	25,900	June 2	3,800	Jan. 22	16,600	Feb. 3	10,800
3	36,700	3	3,600	23	16,600	6	28,000
4	59,000	4	3,600	24	14,800	7	48,400
5	78,800	5	3,300	25	14,300	8	25,100
6	52,700	6	3,100	26	13,300	9	16,900
7	27,200	7	3,000	27	11,300	10	15,900
Dec. 22	42,200	8	3,000			11	16,400
23	37,000	27	1,700	1915		12	13,900
24	28,600	28	1,900	Mar. 14	2,500	13	10,900
25	59,900	29	1,800	15	3,000	14	11,900
26	65,300	30	2,000	16	3,100	15	13,900
27	34,900	July 1	1,900	17	3,100	16	13,900
				19	3,000	17	13,400
1909		1912		20	2,800	18	12,900
Nov. 20	30,000	Jan. 6	5,570	Nov. 18	13,800	19	11,900
22	59,000	7	28,100	21	13,300	20	10,400
23	77,300	8	18,800	23	15,400	21	9,400
24	42,800	12	58,000	24	14,300	22	9,000
25	21,200	13	44,400	25	23,200	23	8,200
		14	30,200	26	28,600	24	7,000
1910		15	18,800	27	14,300	June 3	3,080
Mar. 1	41,200			29	10,800		
2	32,300	1914		30	13,300		
3	22,400	Jan. 20	4,260				

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
February 1907	78,800	3,300	15,500	11.6	12.08	861,000
Water year 1906-7	78,800	530	4,580	3.42	46.48	3,320,000
December 1907	65,300	1,380	13,300	9.93	11.45	818,000
Calendar year 1907	78,800	530	4,890	3.65	49.59	3,540,000
Water year 1907-8	65,300	530	4,050	3.02	41.18	2,940,000
November 1909	77,300	1,510	11,600	8.66	9.66	690,000
Calendar year 1909	77,300	1,050	4,820	3.60	48.77	3,490,000
March 1910	41,200	2,940	8,760	6.54	7.54	539,000
Water year 1909-10	77,300	670	3,980	2.97	40.28	2,880,000
Calendar year 1910	51,100	670	3,490	2.60	35.38	2,530,000
June 1911	3,820	1,630	2,670	1.99	2.22	159,000
July	1,900	760	1,140	.851	.98	70,100
Water year 1910-11	51,100	670	3,060	2.28	31.02	2,220,000
Calendar year 1911	33,900	670	2,870	2.14	29.14	2,080,000
January 1912	44,400	1,960	12,300	9.18	10.58	756,000
January 1914	16,600	3,170	7,280	5.43	6.26	448,000
Water year 1913-14	16,600	670	3,150	2.35	31.88	2,280,000
Calendar year 1914	16,600	670	2,930	2.19	29.70	2,120,000
March 1915	3,680	2,120	2,840	2.12	2.44	175,000
Water year 1914-15	12,600	610	2,170	1.62	21.97	1,570,000
November 1915	28,600	760	7,000	5.22	5.82	417,000
Calendar year 1915	28,600	610	3,060	2.28	31.00	2,220,000
February 1916	48,400	2,820	12,400	9.25	9.98	713,000
June	5,820	2,860	4,080	3.04	3.39	243,000
Water year 1915-16	48,400	610	5,090	3.80	51.71	3,700,000
Calendar year 1916	48,400	850	4,430	3.31	45.01	3,220,000

Middle Fork Willamette River at Jasper, Oreg.--Continued

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18

1.5	640	6.0	8,600
1.7	815	8.0	16,600
2.0	1,120	11.0	31,500
3.0	2,380	14.0	51,000
5.0	5,950		

Jan. 19 to Sept. 30

1.7	710	5.0	5,900
2.0	1,000	6.0	8,600
3.0	2,270		

Note.--Same as preceding table above 6.0 ft.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a700	761	872	2,960	12,700	4,440	5,220	9,700	6,200	2,850	1,330	1,200
2	a700	761	1,360	6,400	13,100	4,100	4,820	6,700	*5,920	2,500	1,340	1,110
3	a700	743	1,650	5,970	33,900	3,880	4,540	5,300	5,860	2,620	1,280	1,060
4	a700	725	1,340	4,670	31,200	3,660	4,380	4,940	5,220	3,010	1,300	990
5	a700	725	2,030	3,930	28,200	3,450	4,380	5,060	5,020	3,110	1,290	1,000
6	a700	708	2,060	3,460	33,900	3,360	4,420	5,720	5,580	3,010	1,290	980
7	a700	708	4,370	3,640	26,600	3,270	4,380	6,120	9,460	3,010	1,340	1,070
8	a700	674	4,890	*6,150	24,500	3,560	4,160	6,350	12,100	3,190	1,290	1,060
9	a700	674	3,120	*17,500	17,500	3,880	3,820	6,400	9,950	*3,010	1,270	980
10	a700	716	4,950	17,100	12,600	4,080	3,630	5,920	8,660	2,780	1,180	930
11	a700	743	5,510	10,200	9,600	4,180	3,500	5,420	7,580	2,620	1,130	900
12	a700	910	6,050	11,500	7,880	*4,860	3,480	4,940	7,100	2,550	1,070	a880
13	a700	1,230	4,990	17,400	6,850	4,760	3,590	4,540	6,750	2,520	1,070	a860
14	a700	1,300	3,820	*14,900	6,020	4,380	3,500	4,800	6,100	2,410	1,060	a840
15	a700	1,280	3,150	9,740	5,740	4,220	3,300	4,860	5,740	2,270	1,070	840
16	a700	990	2,750	10,700	5,400	4,300	3,000	4,740	5,480	2,070	1,130	820
17	a700	862	2,440	19,800	10,000	4,940	3,400	4,460	5,340	2,000	1,060	*840
18	a700	815	2,210	50,800	12,600	4,940	3,820	4,440	5,340	1,930	*1,040	810
19	a700	788	*1,990	*48,000	8,940	5,920	3,980	7,700	5,140	a1,920	1,060	791
20	a700	806	2,040	31,800	7,200	7,520	4,000	11,900	4,520	1,910	1,000	810
21	a700	815	2,000	25,200	6,150	7,380	4,520	10,400	4,300	1,780	1,010	a800
22	716	761	2,580	17,300	5,640	9,530	5,380	9,460	4,000	1,710	980	800
23	725	761	2,660	13,300	5,180	10,900	5,920	8,660	a3,900	1,690	1,040	782
24	779	770	2,320	10,400	4,820	10,800	5,700	a8,500	3,800	1,670	1,020	773
25	779	*806	2,100	9,140	4,460	12,200	5,260	a8,000	3,630	1,690	1,090	a760
26	743	743	1,930	9,390	4,220	9,460	4,060	7,760	3,270	1,600	1,400	750
27	761	734	1,800	8,210	4,300	7,640	5,900	9,280	2,800	1,510	1,840	755
28	725	752	1,730	7,320	4,680	6,950	7,610	9,040	2,200	a1,450	1,590	755
29	725	734	1,910	*8,970	-	6,120	*6,800	8,150	2,300	1,400	1,520	800
30	725	725	2,840	9,220	-	5,640	5,150	7,250	2,700	1,400	1,440	810
31	725	-	3,060	9,840	-	5,700	-	6,450	-	1,360	1,290	-
Total	22,103	24,520	86,522	424,910	353,880	180,020	135,620	212,960	165,960	68,550	37,820	26,556
Mean	713	817	2,791	13,710	12,640	5,807	4,521	6,870	5,532	2,211	1,220	885
Cfsm	0.532	0.610	2.08	10.2	9.43	4.33	3.38	5.13	4.13	1.65	0.910	0.660
In.	0.61	0.68	2.40	11.80	9.82	5.00	3.76	5.91	4.61	1.90	1.05	0.74
Ac-ft	43,840	48,630	171,600	842,800	701,900	357,100	269,000	422,400	329,200	136,000	75,000	52,670

Calendar year 1952: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1952-53: Max 50,800 Min 674 Mean 4,766 Cfsm 3.56 In. 48.28 Ac-ft 3,450,000

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station at Lowell.

Willamette River at Springfield, Oreg.

Location.--Lat 44°02'45", long. 123°01'40", in SE¼ sec. 34, T. 17 S., R. 3 W., near center of span on downstream side of highway bridge at Springfield, at mile 185.6.

Drainage area.--2,030 sq mi, approximately.

Records available.--November 1911 to December 1913, June 1919 to September 1953. Published as "at Eugene" June 1919 to September 1928. Gage-height records collected at site at Eugene since 1878 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 423.77 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Nov. 27, 1911, to Dec. 31, 1913, chain gages on bridge a quarter of a mile upstream at different datum. June 1, 1919, to Nov. 24, 1928, staff gage at site 4 miles downstream at different datum.

Average discharge.--35 years (1912-13, 1919-53), 5,269 cfs.

Extremes.--Maximum discharge during year, 92,900 cfs Jan. 19 (gage height, 15.39 ft), from rating curve extended above 42,000 cfs; minimum daily, 800 cfs Nov. 6-12.
1911-13, 1919-53: Maximum discharge, 140,000 cfs Dec. 29, 1945 (gage height, 20.9 ft), from rating curve extended above 93,000 cfs; minimum, 500 cfs Aug. 11, 1926.
Maximum stage recorded by U. S. Weather Bureau, 22.0 ft Jan. 25, 1903, at Eugene.
Floods in December 1861 and February 1890 reached about the same stage.

Remarks.--Records good except those for periods of shifting control or no gage-height record, which are fair. Slight diurnal fluctuation at low flow caused by logging operations in basin of Middle Fork Willamette River. Small diversions above station. Flow regulated at times by Cottage Grove Reservoir (see p.125) and by Dorena Reservoir (see p.128).

Revisions (water years).--WSP 694: Drainage area. WSP 984: 1921, 1923, 1927. WSP 1248: 1912-13, 1926, 1928, 1930.

Rating tables, water year 1952-53, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
1.4	880	5.0	7,950	1.9	1,300	5.0	9,250
2.0	1,260	7.0	17,300	2.5	2,090	7.0	20,000
2.5	1,760	10.0	37,000	3.0	2,980	10.0	42,500
3.0	2,560	13.0	60,000	4.0	5,600	13.0	71,000
4.0	4,780						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,390	a1,100	a1,100	4,620	16,500	6,110	6,620	10,900	7,920	3,020	1,520	2,000
2	1,390	a1,100	1,280	9,390	17,300	5,300	5,990	9,300	7,600	3,040	1,630	2,200
3	1,370	a950	2,300	9,190	42,400	4,670	5,570	6,970	7,140	2,780	1,730	2,150
4	1,380	a900	1,770	6,790	*43,200	4,260	5,240	6,110	6,380	3,330	*1,960	2,120
5	1,540	a900	3,210	5,500	34,200	4,070	5,150	6,170	6,140	3,400	1,960	2,060
6	1,540	a800	3,410	4,860	43,200	3,890	5,240	*6,800	7,080	3,330	1,930	2,090
7	1,530	a800	7,520	*5,300	35,400	3,810	5,180	7,220	11,800	3,290	1,660	2,110
8	1,540	a800	11,800	9,990	34,400	3,940	4,940	7,460	16,400	3,360	1,600	1,970
9	1,540	a800	7,070	26,800	25,200	4,290	4,520	7,960	14,200	3,200	1,560	1,910
10	1,540	a800	9,550	27,600	17,900	4,640	4,260	8,000	11,800	3,000	1,540	1,880
11	1,560	a800	11,600	19,100	13,000	4,940	3,910	7,280	9,700	2,800	1,760	1,840
12	1,700	a800	9,830	17,900	10,200	5,960	3,890	6,520	8,760	2,690	1,760	1,790
13	1,700	a950	8,100	26,500	8,600	6,240	4,020	5,750	8,240	2,600	1,730	1,760
14	1,740	1,220	6,020	23,700	7,530	5,630	4,340	5,690	7,390	2,510	1,720	1,730
15	1,720	1,320	5,000	15,700	7,220	5,390	4,150	5,780	6,900	2,400	1,730	1,700
16	1,710	1,200	4,130	16,400	6,860	5,540	4,020	5,570	*6,440	2,250	1,760	*1,700
17	*1,650	a1,100	3,580	28,700	14,600	6,800	3,860	5,300	6,110	2,120	1,740	1,660
18	1,450	a1,000	3,070	58,400	21,200	6,860	4,340	5,210	5,900	2,080	1,700	1,670
19	1,380	*916	2,800	65,700	14,600	*8,600	4,670	9,070	5,750	2,020	1,690	1,630
20	1,380	a950	2,670	44,300	10,400	12,800	4,820	14,500	5,480	1,940	1,690	1,650
21	1,370	a950	2,800	*37,400	8,680	13,400	4,970	14,000	5,030	1,830	1,670	1,650
22	1,360	a950	3,610	28,500	7,600	14,800	6,380	12,900	4,790	1,800	1,660	1,470
23	1,360	a900	4,050	23,600	7,140	16,600	7,040	12,800	4,550	1,730	1,660	1,450
24	1,350	a950	3,490	20,200	6,410	16,200	6,860	14,700	4,320	1,670	1,670	1,420
25	1,220	a950	3,050	19,300	5,810	18,100	5,750	13,000	4,090	1,670	1,830	1,420
26	a1,100	a950	2,690	20,400	5,480	14,800	3,790	12,000	3,890	1,630	2,200	1,390
27	a1,100	a850	2,540	18,500	5,420	11,200	7,110	14,200	3,510	1,580	2,730	1,390
28	a1,100	a850	2,450	14,200	5,840	9,300	9,300	13,800	2,670	1,530	2,490	1,430
29	a1,100	a850	2,540	15,700	-	8,280	9,160	11,700	2,690	1,510	2,350	1,540
30	a1,100	a850	4,010	14,100	-	7,460	7,560	9,700	3,000	1,510	2,280	1,570
31	a1,100	-	4,970	14,400	-	7,180	-	8,360	-	1,470	2,110	-
Total	44,010	28,256	142,010	652,740	476,290	251,060	162,650	284,720	205,670	73,090	57,020	52,350
Mean	1,420	942	4,581	21,060	17,010	8,099	5,422	9,184	6,856	2,358	1,839	1,745
Cfsm	0.700	0.464	2.26	10.4	8.38	3.99	2.67	4.52	3.38	1.16	0.906	0.860
In.	0.81	0.52	2.60	11.96	8.73	4.60	2.98	5.22	3.77	1.34	1.04	0.96
Ac-ft	87,290	56,040	281,700	1,295,000	944,700	498,000	322,600	564,700	407,900	145,000	113,100	103,800

Calendar year 1952: Max 33,300 Min 800 Mean 5,300 Cfsm 2.61 In. 35.54 Ac-ft 3,847,000
Water year 1952-53: Max 65,700 Min 800 Mean 6,657 Cfsm 3.28 In. 44.53 Ac-ft 4,820,000

Peak discharge (base, 35,000 cfs).--Jan. 19 (2 a.m.) 92,900 cfs (15.39 ft); Feb. 3 (8:30 p.m.) 54,900 cfs (11.36 ft); Feb. 6 (9 a.m.) 45,200 cfs (10.30 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations at Harrisburg and McKenzie River near Coburg.
Note.--Shifting-control method used Oct. 1-25, Nov. 14-16, Dec. 2-7, 16-30, Jan. 9-19.

McKenzie River at outlet of Clear Lake, Oreg.

Location.--Lat 44°21'40", long. 121°59'40", in SE¼ sec. 8, T. 14 S., R. 7 E., on west bank of Clear Lake in narrow channel 150 ft above outlet and at mile 85.9 (river-profile survey).

Drainage area.--101 sq mi.

Records available.--June 1912 to July 1915, October 1947 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 3,015.32 ft above mean sea level (levels by Eugene Water and Electric Board). June 20, 1912, to July 31, 1915, float gage at site 1 mile north at different datum.

Average discharge.--8 years (1912-14, 1947-53), 513 cfs.

Extremes.--Maximum discharge during year, 2,600 cfs Jan. 18 (gage height, 7.21 ft), from rating curve extended above 1,400 cfs by logarithmic plotting; minimum, 201 cfs Nov. 30. 1912-15, 1947-53: Maximum discharge, that of Jan. 18, 1953; minimum daily, 201 cfs July 31, 1915.
A discharge of 165 cfs was measured on Sept. 28, 1915.

Remarks.--Records excellent except those for periods of backwater from moss or no gage-height record, which are good. Flow regulated by natural storage in lake. At high stages an undetermined flow enters numerous sink holes in lava rock along south edge of lake above station.

Correction.--Daily mean discharge for Feb. 18, 1949, was 283 cfs and that for May 13, 1949, was 1,350 cfs, superseding erroneous figures published in WSP 1154.

Revisions.--WSP 1124: Drainage area.

Rating table, water year 1952-53, except period of backwater from moss (gage height, in feet, and discharge, in cubic feet per second)

1.3	201	3.0	645
1.7	274	5.0	1,420
2.0	346	6.5	2,180

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	274	231	208	216	1,060	514	a430	718	824	586	430	357
2	274	229	*206	223	1,040	502	a430	701	820	583	427	354
3	272	227	204	227	1,360	490	a430	701	806	583	427	346
4	270	225	206	236	1,370	472	a420	718	788	583	422	346
5	268	225	204	254	*1,220	460	a420	785	774	571	422	343
6	266	223	208	266	1,430	448	a430	856	785	571	422	343
7	264	223	215	285	1,430	445	a420	880	844	571	419	338
8	264	222	211	296	1,360	442	a410	876	856	568	419	336
9	264	222	208	333	1,210	436	a410	836	824	559	413	333
10	262	220	211	366	1,130	436	a410	796	813	547	410	333
11	260	222	211	427	1,070	442	a410	778	813	538	408	325
12	258	222	213	765	1,010	448	a410	764	828	529	408	325
13	254	223	213	1,010	972	445	a410	764	824	520	408	323
14	252	222	216	832	932	445	a410	764	813	511	402	323
15	252	218	225	757	892	445	a410	760	810	499	399	318
16	250	218	229	785	852	451	a410	743	806	*493	396	315
17	250	218	234	1,090	856	448	a410	754	796	487	394	313
18	249	216	234	2,180	806	448	a410	813	792	481	388	313
19	247	215	234	2,090	746	448	a420	936	774	475	382	308
20	245	*215	234	1,880	704	448	a420	944	754	472	380	303
21	243	213	232	1,740	656	445	*413	920	722	463	377	303
22	*243	211	231	1,560	620	445	422	884	704	460	368	303
23	241	211	225	1,470	601	436	439	860	690	451	368	301
24	241	210	222	1,350	574	436	511	852	684	448	368	298
25	240	208	218	1,270	556	436	562	828	648	442	368	296
26	238	208	216	1,180	541	433	601	824	631	436	371	296
27	236	206	216	1,080	529	433	687	848	617	433	*360	294
28	234	206	215	1,010	520	436	768	*840	614	433	360	295
29	232	204	216	980	-	436	754	848	604	430	360	292
30	232	204	215	968	-	442	732	852	598	430	360	296
31	231	-	211	984	-	439	-	840	-	430	357	-
Total	7,806	6,517	6,741	26,110	26,047	13,930	14,219	25,283	22,656	15,583	12,193	9,568
Mean	252	217	217	907	930	449	474	816	755	503	393	319
Cfsm	2.50	2.15	2.15	8.98	9.21	4.45	4.69	8.08	7.48	4.98	3.89	3.16
In.	2.87	2.40	2.48	10.35	9.59	5.13	5.24	9.31	8.34	5.74	4.49	3.52
Ac-ft	15,480	12,930	13,370	55,760	51,660	27,630	28,200	50,150	44,940	30,910	24,180	18,980

Calendar year 1952: Max 1,080 Min 204 Mean 446 Cfsm 4.42 In. 60.13 Ac-ft 323,900
Water year 1952-53: Max 2,180 Min 204 Mean 517 Cfsm 5.12 In. 69.46 Ac-ft 374,200

Peak discharge (base, 750 cfs).--Jan. 13 (6 to 11 a.m.) 1,030 cfs (4.03 ft); Jan. 18 (8 p.m.) 2,600 cfs (7.21 ft); Feb. 3 (7 p.m.) 1,510 cfs (5.21 ft); May 19 (12 p.m.) 1,020 cfs (4.01 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for station at McKenzie Bridge.

Note.--Backwater from moss Apr. 24 to Sept. 29.

McKenzie River at McKenzie Bridge, Oreg.

Location.--Lat 44°10'50", long. 122°07'20", in NE¼ sec. 18, T. 16 S., R. 6 E., on left bank 1.7 miles east of village of McKenzie Bridge, 2¾ miles upstream from Horse Creek, and at mile 66.4 (river profile-survey).

Drainage area.--345 sq mi at measuring section three-quarters of a mile upstream from gage.

Records available.--August 1910 to September 1953. Published as "near McKenzie Bridge" August 1910 to September 1911 and October 1914 to September 1916.

Gage.--Water-stage recorder. Datum of gage is 1,419.04 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to June 12, 1932, staff gage at several sites within 2 miles of present site at various datums.

Average discharge.--37 years (1910-14, 1915-16, 1918-21, 1923-25, 1926-53), 1,632 cfs.

Extremes.--Maximum discharge during year, 12,700 cfs Jan. 18 (gage height, 7.68 ft), from rating curve extended above 7,200 cfs by logarithmic plotting; minimum, 1,100 cfs Nov. 25, 27-30.

1910-53: Maximum discharge, 16,500 cfs Jan. 6, 1923 (gage height, 8.3 ft, from flood-marks, site and datum then in use), from rating curve extended above 6,300 cfs; minimum, 805 cfs Oct. 20, 1931.

Remarks.--Records excellent. No diversion or regulation above station.

Revisions (water years).--WSP 814: Drainage area. WSP 1248: 1911-16, 1919(M), 1920-25.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18		Jan. 19 to Sept. 30	
1.0	1,060	1.0	1,060
2.0	1,940	2.0	2,010
3.0	3,150	3.5	4,000
5.0	6,620	5.6	7,820
7.0	11,100		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,220	1,140	1,120	1,260	3,580	1,860	*1,810	2,160	2,340	1,860	1,550	1,370
2	1,220	1,140	*1,140	1,610	3,600	1,810	1,770	2,110	2,300	1,860	1,540	1,360
3	*1,220	1,130	1,120	1,710	5,600	1,770	1,750	2,090	2,240	1,870	1,530	1,360
4	1,210	1,130	1,160	1,570	4,890	1,740	1,730	2,150	2,210	1,860	1,530	1,360
5	1,210	1,120	1,160	1,490	4,650	1,710	1,740	2,390	2,200	1,850	1,520	1,350
6	1,200	1,120	1,150	1,430	5,540	1,690	1,750	2,530	2,310	1,860	1,540	1,340
7	1,200	1,120	1,250	1,500	5,250	1,680	1,730	2,580	2,550	1,850	1,510	1,340
8	1,190	1,120	1,210	1,840	4,640	1,710	1,700	2,510	2,530	1,830	1,500	1,340
9	1,190	1,120	1,170	3,840	3,880	1,750	1,670	2,370	2,450	1,800	1,490	1,340
10	1,190	1,120	1,260	2,870	3,370	1,780	1,640	2,250	2,400	1,770	1,480	1,330
11	1,190	1,130	1,380	2,570	3,060	1,800	1,620	2,190	2,390	1,750	1,480	1,320
12	1,190	1,140	1,490	4,040	2,840	1,810	1,620	2,150	2,400	1,740	1,470	1,310
13	1,190	1,160	1,360	4,230	2,690	1,780	1,620	2,150	2,350	1,720	1,460	1,300
14	1,180	1,150	1,310	3,390	2,570	1,750	1,610	2,180	2,310	1,710	1,460	1,300
15	1,180	1,130	1,280	*2,830	2,460	1,740	1,600	2,190	2,280	1,700	1,450	1,290
16	1,180	1,120	1,260	3,510	2,450	1,810	1,610	2,130	2,250	1,690	1,440	1,290
17	1,170	1,120	1,250	5,960	2,820	1,810	1,660	2,110	2,270	1,680	1,440	1,280
18	1,170	1,120	1,230	10,800	2,640	1,800	1,660	2,240	2,230	1,670	1,430	1,280
19	1,160	1,120	1,220	7,800	2,490	1,800	1,710	2,690	2,190	1,670	1,430	1,270
20	1,160	1,120	1,220	7,000	2,390	1,800	1,820	2,690	2,120	1,670	1,420	1,270
21	1,150	1,120	1,220	5,400	2,270	1,800	1,960	2,620	2,080	1,660	1,420	1,270
22	*1,150	1,110	1,220	4,510	2,180	1,880	2,040	2,510	2,040	1,660	1,410	1,260
23	1,150	1,110	1,210	4,120	2,100	2,010	2,100	2,470	2,010	1,650	1,410	1,260
24	1,160	1,110	1,200	3,660	2,030	2,140	2,020	2,430	1,970	1,650	1,400	1,260
25	1,150	1,110	1,190	3,370	1,970	2,160	2,060	2,350	1,960	1,640	*1,410	1,260
26	1,150	1,110	1,190	3,120	1,930	2,060	2,150	2,370	1,930	1,610	1,480	1,260
27	1,140	1,100	1,180	2,880	*1,890	1,980	2,430	2,480	1,910	1,600	1,420	1,250
28	1,140	1,100	1,180	2,750	1,880	1,960	2,490	2,460	1,900	1,600	1,410	1,260
29	1,140	1,100	1,220	2,810	-	1,900	2,370	*2,460	1,900	1,590	1,410	1,250
30	1,140	1,100	1,260	3,080	-	1,870	2,240	2,430	1,880	1,580	1,390	1,260
31	1,140	-	1,260	3,320	-	1,850	-	2,370	-	*1,570	1,380	-
Total	36,430	33,640	38,070	110,270	87,660	57,010	55,680	72,810	65,900	53,220	45,210	38,990
Mean	1,175	1,121	1,228	3,557	3,131	1,839	1,856	2,349	2,197	1,717	1,458	1,300
Cfsm	3.41	3.25	3.56	10.3	9.08	5.33	5.38	6.81	6.37	4.98	4.23	3.77
In.	3.93	3.63	4.10	11.89	9.45	6.15	6.00	7.85	7.10	5.74	4.87	4.20
Ac-ft	72,260	66,720	75,510	218,700	173,900	113,100	110,400	144,400	130,700	105,600	89,670	77,330

Calendar year 1952: Max 3,390 Min 1,100 Mean 1,622 Cfsm 4.70 In. 64.00 Ac-ft 1,178,000
Water year 1952-53: Max 10,800 Min 1,100 Mean 1,904 Cfsm 5.52 In. 74.91 Ac-ft 1,378,000

Peak discharge (base, 3,000 cfs).--Jan. 9 (5:30 a.m.) 4,960 cfs (4.11 ft); Jan. 12 (9:30 p.m.) 4,990 cfs (4.13 ft); Jan. 18 (3 p.m.) 12,700 cfs (7.68 ft); Feb. 3 (11 a.m.) 6,320 cfs (4.85 ft); Feb. 5 (11:30 p.m.) 5,940 cfs (4.66 ft).

* Discharge measurement made on this day.

South Fork McKenzie River near Rainbow, Oreg.

Location.--Lat 44°08'10", long. 122°14'40", in NE¼ sec. 31, T. 16 S., R. 5 E., on right bank 0.2 mile upstream from Cougar Creek, 2 miles south of Rainbow, and 5 miles southeast of town of Blue River.

Drainage area.--211 sq mi.

Records available.--October 1947 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 1,236.42 ft above mean sea level (U. S. Public Roads Administration benchmark).

Average discharge.--6 years, 976 cfs.

Extremes.--Maximum discharge during year, 16,400 cfs Jan. 18 (gage height, 8.34 ft), from rating curve extended above 8,200 cfs by logarithmic plotting; minimum, 234 cfs Oct. 26, 27, 29 (gage height, 1.18 ft).
1947-53: Maximum discharge, that of Jan. 18, 1953; minimum, about 210 cfs Oct. 1, 1947.
Maximum discharge known, 24,500 cfs Dec. 28, 1945 (gage height, 8.8 ft, from floodmarks, at Corps of Engineers gage at site 40 ft upstream; corresponding gage height at present site and datum, about 9.3 ft), computed by Corps of Engineers.

Remarks.--Records good. No diversion or regulation above station.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.2	240	4.0	3,330
1.5	370	6.0	7,900
2.0	720	8.0	15,000
3.0	1,770		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	252	244	280	619	2,780	736	836	1,210	1,240	672	304	304
2	*244	240	340	1,590	3,020	672	784	1,110	1,200	672	300	296
3	244	237	335	1,360	6,320	640	768	1,060	1,120	680	300	296
4	240	240	*360	1,070	4,570	598	760	1,170	1,060	664	300	292
5	244	244	345	920	4,410	591	776	1,440	1,040	640	300	288
6	244	248	325	845	5,790	570	792	1,580	1,260	633	330	284
7	244	240	619	960	4,680	584	752	1,570	2,150	619	308	284
8	240	237	493	1,460	3,860	672	712	1,430	2,070	598	304	284
9	244	240	394	4,820	2,760	800	664	1,310	1,840	563	296	280
10	244	240	750	3,150	2,120	863	626	1,190	1,700	528	300	280
11	244	248	845	2,140	1,740	845	605	1,100	1,600	500	300	280
12	240	276	1,070	3,150	1,490	845	605	1,050	1,560	472	296	280
13	240	320	845	3,490	1,330	784	633	1,050	1,420	451	296	276
14	244	325	720	2,430	1,220	736	633	1,130	1,340	430	292	272
15	244	296	648	*1,700	1,140	712	612	1,130	1,270	412	300	272
16	244	280	591	2,830	1,190	768	672	1,070	1,220	394	296	268
17	244	272	535	5,860	2,000	776	827	1,070	1,220	376	292	268
18	240	280	486	13,600	1,540	784	827	1,240	1,190	365	288	268
19	244	288	465	6,690	1,260	827	900	2,390	1,110	355	284	268
20	244	268	444	5,500	1,130	827	1,130	2,440	1,030	350	288	268
21	240	252	444	3,840	1,020	827	1,360	2,110	960	*340	288	264
22	240	256	472	2,790	980	1,160	1,490	1,840	940	340	284	264
23	240	264	465	2,410	930	1,340	1,530	1,670	900	335	280	268
24	244	268	418	1,970	872	1,590	1,330	1,510	854	330	296	268
25	240	272	412	1,760	836	1,540	1,290	1,360	818	320	*300	268
26	237	280	418	1,540	836	1,270	1,390	1,300	776	320	430	268
27	237	276	406	1,340	*736	1,110	1,630	1,500	760	316	370	268
28	240	264	412	1,320	760	1,040	1,650	1,460	744	312	335	*284
29	240	280	493	1,580	-	960	1,450	*1,450	744	308	360	268
30	244	268	680	2,040	-	*930	1,340	1,370	712	308	325	284
31	244	-	612	2,320	-	910	-	1,290	-	304	312	-
Total	7,514	7,943	16,122	87,094	61,320	27,307	29,374	43,600	35,848	13,907	9,554	8,312
Mean	242	265	520	2,809	2,190	881	979	1,406	1,195	449	308	277
Cfsm	1.15	1.26	2.46	13.3	10.4	4.18	4.64	6.66	5.66	2.13	1.46	1.31
In.	1.32	1.40	2.84	15.35	10.81	4.81	5.18	7.68	6.32	2.45	1.68	1.47
Ac-ft	14,900	15,750	31,980	172,700	121,600	54,160	58,260	86,480	71,100	27,580	18,950	16,490

Calendar year 1952: Max 3,740 Min 237 Mean 757 Cfsm 3.59 In. 48.85 Ac-ft 549,800
Water year 1952-53: Max 13,600 Min 237 Mean 953 Cfsm 4.52 In. 61.31 Ac-ft 690,000

Peak discharge (base, 3,500 cfs).--Jan. 9 (9 a.m.) 5,840 cfs (5.22 ft); Jan. 18 (3 p.m.) 16,400 cfs (8.34 ft); Feb. 3 (11 a.m.) 7,390 cfs (5.83 ft); Feb. 6 (1 a.m.) 6,660 cfs (5.57 ft).
* Discharge measurement made on this day.

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Blue River above Quentin Creek, Oreg.

Location.--Lat 44°16'00", long. 122°12'00", in T. 15 S., R. 5 E. (unsurveyed), on left bank about 1½ miles upstream from Quentin Creek, 7 miles north of town of McKenzie Bridge, and 11 miles northeast of town of Blue River.

Drainage area.--11.5 sq mi.

Records available.--October 1947 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 1,960 ft (barometric levels by U. S. Forest Service). Prior to Nov. 20, 1947, staff gage at site 15 ft upstream at same datum.

Average discharge.--6 years, 76.5 cfs.

Extremes.--Maximum discharge during year, 1,630 cfs Jan. 18 (gage height, 4.18 ft), from rating curve extended above 530 cfs by logarithmic plotting; maximum gage height, 4.54 ft Jan. 18, momentary backwater from debris; minimum discharge, 2.1 cfs Oct. 7-30 (gage height, 0.62 ft).

1947-53: Maximum discharge, that of Jan. 18, 1953; maximum gage height, that of Jan. 18, 1953; minimum discharge, 2.1 cfs Sept. 19-25, 1951, Oct. 7-30, 1952 (gage height, 0.62 ft).

Remarks.--Records good. No diversion or regulation above station.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.6	1.6	1.5	100
.7	5.2	2.0	215
.8	11	2.5	380
1.0	26	3.0	630
1.2	51	4.0	1,450

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.7	3.1	8.6	42	240	43	64	110	93	36	10	9.2
2	*2.4	2.7	11	118	229	41	60	102	84	36	10	8.6
3	2.4	2.7	*7.4	127	456	40	57	96	76	36	9.6	8.6
4	2.4	2.7	20	100	308	38	58	108	72	35	9.6	8.0
5	2.4	2.4	17	82	295	38	63	131	69	34	9.6	7.4
6	2.4	2.4	13	71	392	36	68	138	93	34	17	6.8
7	2.1	2.4	24	82	316	38	66	140	120	33	10	6.8
8	2.1	2.4	16	199	249	48	60	133	120	32	10	6.2
9	2.1	2.4	12	606	178	51	52	120	112	30	9.6	6.2
10	2.1	2.7	35	299	138	57	47	104	106	27	9.2	5.7
11	2.1	4.3	62	232	114	64	44	93	102	25	8.6	5.2
12	2.1	7.4	82	416	93	68	45	87	102	24	8.6	5.2
13	2.1	10	62	*376	79	63	45	86	95	23	8.0	5.2
14	2.1	9.2	47	229	69	56	43	84	87	22	8.0	4.7
15	2.1	4.7	40	159	64	57	43	80	82	21	7.4	4.7
16	2.1	4.3	34	320	73	72	44	74	79	20	7.4	4.7
17	2.1	3.9	30	746	129	69	57	72	79	19	6.8	4.7
18	2.1	3.5	26	1,250	104	66	62	96	76	18	6.2	4.7
19	2.1	3.5	24	666	84	60	76	133	71	17	6.2	4.3
20	2.1	3.5	22	624	74	56	106	131	62	*16	6.2	4.3
21	2.1	3.1	20	326	64	54	129	131	58	15	6.2	4.3
22	2.1	3.1	20	223	58	60	135	129	56	15	5.7	4.3
23	2.1	3.1	19	192	51	76	144	129	51	14	5.2	4.3
24	2.1	2.7	17	159	47	93	131	127	48	14	6.8	4.3
25	2.1	2.7	17	138	*43	100	127	112	45	14	11	4.3
26	2.1	2.7	15	127	40	93	131	*112	43	14	*35	4.3
27	2.1	2.7	15	104	41	80	166	129	40	13	17	4.3
28	2.1	2.7	15	102	43	77	161	122	41	12	16	8.6
29	2.1	2.7	29	131	-	69	135	118	41	12	17	5.2
30	2.4	2.7	45	168	-	71	124	110	38	12	12	9.4
31	2.4	-	38	215	-	*69	-	96	-	11	10	-
Total	67.8	108.4	843.0	8,629	4,071	1,903	2,543	3,433	2,241	684	319.9	174.5
Mean	2.19	3.61	27.2	278	145	61.4	84.8	111	74.7	22.1	10.3	5.82
Cfsm	0.190	0.314	2.37	24.2	12.6	5.34	7.37	9.65	6.50	1.92	0.896	0.506
In.	0.22	0.35	2.73	27.91	13.17	6.15	8.22	11.10	7.25	2.21	1.03	0.56
Ac-ft	134	215	1,670	17,120	8,070	3,770	5,040	6,810	4,440	1,360	635	346

Calendar year 1952: Max 340 Min 2.1 Mean 54.0 Cfsm 4.70 In. 63.89 Ac-ft 39,200
Water year 1952-53: Max 1,250 Min 2.1 Mean 68.5 Cfsm 5.96 In. 80.90 Ac-ft 49,610

Peak discharge (base, 400 cfs).-Jan. 9 (5 a.m.) 1,040 cfs (3.55 ft); Jan. 12 (8 p.m.) 554 cfs (2.87 ft); Jan. 18 (12 m.) 1,630 cfs (4.18 ft); Feb. 3 (9 to 10 a.m.) 559 cfs (2.88 ft); Feb. 5 (11 p.m.) 470 cfs (2.71 ft).

* Discharge measurement made on this day.

Lookout Creek near Blue River, Oreg.

Location.--Lat 44°12'40", long. 122°15'20", in T. 15 or 16 S., R. 5 E. (unsurveyed), on left bank 0.4 mile upstream from mouth and 6 miles northeast of town of Blue River.

Drainage area.--24.1 sq mi.

Records available.--August 1949 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is about 1,370 ft (from topographic map).

Extremes.--Maximum discharge during year, 3,620 cfs Jan. 18 (gage height, 7.18 ft), from rating curve extended above 700 cfs by logarithmic plotting; minimum, 6.4 cfs Nov. 25-30.
1949-53: Maximum discharge, that of Jan. 18, 1953; minimum, that of Nov. 25-30, 1952.

Remarks.--Records good. No diversion or regulation above station. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
1.76	6.4	3.4	218	1.9	12	3.5	243
1.8	8.2	4.0	442	2.2	24	4.0	440
2.0	19	5.0	1,030	2.5	45	5.0	1,030
2.4	44	6.0	2,000	2.8	80	6.0	2,000
2.8	90	7.0	3,350	3.2	158		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	9.3	21	111	550	100	*142	181	149	53	19	17
2	10	8.7	33	345	575	94	129	168	140	53	19	17
3	9.8	8.7	27	301	1,130	90	122	156	127	52	18	16
4	9.8	8.7	*51	218	776	85	120	179	120	49	18	15
5	9.3	8.2	48	173	778	80	124	221	118	47	18	15
6	9.3	7.8	42	144	988	77	127	231	149	46	23	15
7	9.3	7.3	111	170	790	79	122	228	190	43	19	15
8	9.3	7.3	75	320	630	94	112	201	179	41	18	15
9	9.3	7.3	53	925	431	112	103	174	163	37	18	14
10	9.3	7.8	142	585	306	122	98	153	153	35	17	14
11	9.3	11	198	437	231	129	91	142	151	32	17	14
12	8.7	19	236	700	190	140	94	133	146	31	17	13
13	8.7	28	161	700	161	129	105	131	131	30	16	13
14	8.7	26	121	*500	144	120	105	137	124	28	16	13
15	8.7	19	100	362	131	120	101	131	118	28	16	13
16	8.7	12	84	814	178	161	107	120	110	27	16	13
17	8.2	10	74	1,800	530	166	129	118	110	*26	16	13
18	8.2	9.3	65	2,850	317	161	129	168	101	26	15	13
19	8.2	8.7	61	1,430	221	163	149	270	93	25	15	13
20	8.2	8.7	57	1,130	179	158	195	240	86	24	*15	13
21	8.2	7.8	57	724	151	171	234	234	83	24	15	12
22	8.2	7.3	70	560	140	270	263	215	79	23	15	12
23	8.2	6.8	68	475	124	321	260	224	74	22	15	13
24	9.3	6.8	57	348	114	329	212	215	69	22	16	12
25	8.7	6.8	49	295	105	306	201	192	66	22	17	12
26	8.7	6.4	45	250	*100	243	218	190	64	21	44	12
27	8.2	6.4	43	206	101	204	281	*221	59	20	24	12
28	8.2	6.4	42	212	105	184	267	209	58	20	22	16
29	8.2	6.4	89	321	-	163	228	201	57	20	28	13
30	8.7	6.4	123	422	-	161	206	179	56	20	20	16
31	9.3	-	105	505	-	153	-	161	-	19	18	-
Total	274.9	300.3	2,508	18,313	10,178	4,885	4,774	5,723	3,323	966	580	414
Mean	8.87	10.0	80.9	591	364	158	159	185	111	31.2	18.7	13.8
Cfsm	0.368	0.415	3.36	24.5	15.1	6.56	6.60	7.68	4.61	1.29	0.776	0.573
In.	0.42	0.46	3.87	28.26	15.71	7.54	7.37	8.83	5.13	1.49	0.90	0.64
Ac-ft	545	596	4,970	36,320	20,190	9,690	9,470	11,350	6,590	1,920	1,150	821

Calendar year 1952: Max 862 Min 6.4 Mean 99.1 Cfsm 4.11 In. 55.95 Ac-ft 71,920
Water year 1952-53: Max 2,830 Min 6.4 Mean 143 Cfsm 5.93 In. 80.62 Ac-ft 103,600

Peak discharge (base, 800 cfs).--Jan. 9 (5:30 a.m.) 1,280 cfs (5.31 ft); Jan. 12 (8:30 p.m.) 848 cfs (4.74 ft); Jan. 18 (1 p.m.) 3,620 cfs (7.18 ft); Feb. 3 (10:30 a.m.) 1,310 cfs (5.34 ft); Feb. 5 (11 p.m.) 1,210 cfs (5.22 ft).
* Discharge measurement made on this day.

Blue River near Blue River, Oreg.

Location.--Lat 44°11'00", long. 122°16'50", near line between secs. 13 and 14, T. 16 S., R. 4 E., on right bank 3 miles upstream from Quartz Creek and 3½ miles northeast of town of Blue River.

Drainage area.--75 sq mi, approximately.

Records available.--September 1935 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is about 1,225 ft (from profile map of McKenzie River).

Average discharge.--18 years, 383 cfs.

Extremes.--Maximum discharge during year, 10,900 cfs Jan. 18 (gage height, 8.38 ft), from rating curve extended above 2,500 cfs on basis of shape of previous curve defined to 7,500 cfs; minimum, 14 cfs Oct. 5-7.
1935-53: Maximum discharge, 13,300 cfs Dec. 28, 1945 (gage height, 9.80 ft), from rating curve extended above 6,500 cfs; minimum, 13 cfs Sept. 27, 28, Oct. 1, 2, 1938.

Remarks.--Records good except those for period of backwater from logs, which are fair.

Rating tables, water year 1952-53, except period of backwater from logs (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 8				Jan. 9 to Sept. 30			
1.0	11	2.0	385	1.0	16	2.5	860
1.1	26	2.5	685	1.1	36	3.0	1,350
1.3	78	3.0	1,100	1.3	90	4.0	2,650
1.5	155			1.5	175	6.0	6,180
				2.0	465	8.0	10,100

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	26	75	235	1,800	328	*439	624	432	148	55	53
2	16	26	121	588	1,730	292	388	565	394	148	53	50
3	16	24	72	574	3,650	264	388	510	358	148	53	46
4	16	23	*142	390	2,230	242	420	572	328	139	53	41
5	14	22	134	335	2,410	230	446	698	322	134	53	38
6	14	22	109	249	2,950	225	432	698	452	134	60	38
7	14	22	266	350	2,220	247	394	656	640	126	55	38
8	16	22	142	993	1,780	352	358	624	640	126	53	36
9	16	20	121	3,750	1,140	413	322	558	551	118	50	36
10	17	20	302	2,000	815	420	304	498	498	110	50	34
11	17	26	395	1,360	616	426	286	432	465	102	48	34
12	17	61	525	2,660	510	465	292	406	446	94	46	34
13	17	112	360	2,400	439	413	322	406	388	90	43	32
14	17	102	276	1,560	394	370	358	406	364	*90	41	32
15	17	67	231	1,010	352	388	328	382	340	90	41	32
16	17	42	179	*2,670	499	586	370	352	322	87	38	30
17	17	36	146	5,270	1,640	558	465	340	310	84	38	30
18	17	33	138	8,690	887	510	472	472	286	81	36	30
19	18	31	121	4,240	608	498	544	860	269	75	36	30
20	18	31	112	3,850	510	484	707	761	247	72	*36	30
21	*20	31	105	2,220	426	491	797	761	220	69	36	28
22	20	33	151	1,590	394	698	806	716	215	66	36	28
23	20	31	134	1,380	346	869	779	716	205	66	34	30
24	22	28	109	1,020	322	1,040	624	725	185	63	38	30
25	22	28	92	878	298	959	616	624	180	63	41	28
26	20	26	81	770	*292	689	640	579	175	60	162	28
27	20	26	81	608	322	586	896	*716	166	60	94	28
28	20	24	81	632	352	565	860	656	166	60	69	43
29	20	26	193	1,030	-	510	725	586	162	58	90	36
30	22	28	330	1,430	-	491	680	524	157	58	66	38
31	23	-	254	1,710	-	491	-	458	-	58	55	-
Total	557	1,049	5,578	56,442	29,932	15,100	15,458	17,881	9,883	2,877	1,659	1,041
Mean	18.0	35.0	180	1,821	1,069	487	515	577	329	92.8	53.5	34.7
Cfsm	0.240	0.467	2.40	24.3	14.3	6.49	6.87	7.69	4.39	1.24	0.713	0.463
In.	0.28	0.52	2.77	27.99	14.84	7.49	7.67	8.87	4.90	1.43	0.82	0.52
Ac-ft	1,100	2,080	11,060	112,000	59,370	29,950	30,660	35,470	19,600	5,710	3,290	2,060

Calendar year 1952: Max 3,000 Min 14 Mean 284 Cfsm 3.79 In. 51.56 Ac-ft 206,200
Water year 1952-53: Max 8,690 Min 14 Mean 431 Cfsm 5.75 In. 78.10 Ac-ft 312,400

Peak discharge (base, 2,600 cfs).--Jan. 9 (5 a.m.) 5,820 cfs (5.81 ft); Jan. 12 (8:30 p.m.) 3,550 cfs (4.58 ft); Jan. 18 (3 p.m.) 10,900 cfs (8.38 ft); Feb. 3 (9 a.m.) 4,300 cfs (5.01 ft); Feb. 5 (11:30 p.m.) 3,920 cfs (4.80 ft).
* Discharge measurement made on this day.
Note.--Backwater from logs Oct. 1 to Jan. 18.

McKenzie River near Vida, Oreg.

Location.--lat 44°07'30", long. 122°28'10", in NE¼ sec. 5, T. 17 S., R. 3 E., on left bank 1 mile upstream from head of Martin Rapids, 5 miles east of Vida, and at mile 44.3 (river profile-survey).

Drainage area.--930 sq mi, approximately.

Records available.--June 1910 to March 1911 (gage heights only), September 1924 to September 1953. Published as "at Martin Rapids, near Vida" 1910-11.

Gage.--Water-stage recorder. Datum of gage is 855.56 ft above mean sea level, datum of 1929. June 25, 1910, to Mar. 31, 1911, staff gage at site of Martin Rapids, 3 miles downstream, at different datum. Sept. 22, 1924, to Nov. 16, 1928, staff gage at site 20 ft upstream at present datum.

Average discharge.--29 years, 3,859 cfs.

Extremes.--Maximum discharge during year, 51,800 cfs Jan. 18 (gage height, 15.03 ft), from rating curve extended above 32,000 cfs by logarithmic plotting; minimum, 1,560 cfs Nov. 27 (gage height, 0.71 ft).
1924-53: Maximum discharge, 64,400 cfs Dec. 28, 1945 (gage height, 17.70 ft), from rating curve extended above 32,000 cfs by logarithmic plotting; minimum, 1,260 cfs Nov. 7, 1930, Sept. 17, Oct. 4, 8, 9, 1931 (gage height, 0.36 ft).

Remarks.--Records good.

Cooperation.--Water-stage recorder inspected by employee of Eugene Water Board.

Revisions (water years).--WSP 1124: 1943.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.8	1,680	4.0	8,250
1.5	2,750	8.0	22,200
2.5	4,650	14.0	47,200

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,790	1,720	1,790	3,030	11,900	4,520	a4,800	5,930	5,610	3,740	2,560	2,320
2	*1,790	1,710	2,020	6,350	11,800	4,300	a4,600	5,540	5,460	3,740	2,580	2,260
3	1,790	1,710	1,960	5,570	24,300	4,100	a4,500	5,240	5,180	3,780	2,560	2,230
4	1,790	1,680	2,140	4,570	18,300	3,960	a4,500	5,480	5,030	3,740	2,550	2,220
5	1,790	1,680	*2,310	3,920	17,100	3,840	a4,500	6,220	4,900	3,710	2,530	2,200
6	1,750	1,680	2,200	3,570	22,800	3,780	a4,400	6,750	5,480	3,710	2,630	2,180
7	1,750	1,680	3,590	4,000	18,500	3,760	4,300	6,820	7,950	3,710	2,560	2,170
8	1,750	1,650	3,060	5,650	16,600	4,060	4,100	6,600	8,100	3,650	2,520	2,160
9	1,750	1,640	2,450	16,100	12,000	4,400	3,900	6,350	7,220	3,520	2,500	2,140
10	1,760	1,640	4,000	11,300	9,660	4,520	3,780	5,860	6,850	3,410	2,470	2,120
11	1,750	1,710	4,080	8,340	8,130	4,500	3,690	5,370	6,500	3,330	2,420	2,110
12	1,740	1,810	5,130	12,900	7,150	4,690	3,760	5,180	6,420	3,280	2,390	2,100
13	1,750	1,950	4,100	13,800	6,480	4,500	3,920	5,130	6,080	3,230	2,370	2,100
14	1,720	1,960	3,460	10,400	6,080	4,220	3,940	5,240	5,810	3,170	2,370	2,100
15	1,710	1,810	3,100	7,820	5,680	4,180	3,820	5,320	5,610	*3,120	2,390	2,100
16	1,720	1,740	2,820	11,900	6,000	4,710	3,960	5,070	5,460	3,060	2,340	2,080
17	1,720	1,690	2,610	21,600	11,100	4,920	4,400	4,940	5,410	2,970	2,340	2,080
18	1,720	1,680	2,440	44,200	8,670	4,860	4,380	5,390	5,350	2,960	2,320	2,080
19	1,720	1,680	2,320	29,500	6,980	4,960	4,540	8,640	5,130	2,940	2,310	2,080
20	*1,720	1,680	2,290	24,600	6,100	4,990	5,220	8,910	4,860	2,890	2,310	2,060
21	1,720	1,650	2,340	15,600	5,540	5,200	5,740	8,190	4,630	2,850	2,280	2,060
22	1,720	1,630	2,630	13,400	5,300	6,900	6,050	7,500	4,540	2,840	2,260	2,060
23	1,720	1,620	2,500	11,700	4,990	7,480	6,200	7,150	4,440	2,800	2,260	2,060
24	1,740	1,620	2,290	9,810	*4,780	7,920	5,570	7,000	4,260	2,770	2,310	2,060
25	1,740	1,600	2,170	8,850	4,570	7,720	5,500	*6,320	4,160	2,750	*2,340	2,050
26	1,740	1,590	2,110	8,100	4,480	6,520	5,790	6,050	4,100	2,700	2,960	2,020
27	1,720	1,620	2,080	7,180	4,500	5,790	6,800	6,920	4,000	2,700	2,680	2,020
28	1,710	1,620	2,040	6,880	4,650	5,540	7,250	6,750	3,960	2,700	2,500	*2,080
29	1,710	1,590	2,500	8,040	-	5,200	6,520	6,520	3,940	2,650	2,650	2,080
30	1,720	1,590	3,330	9,540	-	*4,960	6,320	6,200	3,860	2,600	2,440	2,120
31	1,740	-	3,060	10,600	-	a4,800	-	5,810	-	2,580	2,360	-
Total	53,960	50,630	84,920	358,820	274,140	155,800	146,750	194,390	160,300	97,600	76,060	63,500
Mean	1,741	1,688	2,739	11,570	9,791	5,026	4,892	6,271	5,343	3,148	2,454	2,117
Cfsm	1.87	1.82	2.95	12.4	10.5	5.40	5.26	6.74	5.75	3.38	2.64	2.28
In.	2.16	2.02	3.40	14.35	10.96	6.23	5.87	7.77	6.41	3.90	2.04	2.54
Ac-ft	107,000	100,400	168,400	711,700	543,700	309,000	291,100	385,600	318,000	193,600	150,900	126,000

Calendar year 1952: Max 15,200 Min 1,590 Mean 3,756 Cfsm 4.04 In. 54.97 Ac-ft 2,726,000
Water year 1952-53: Max 44,200 Min 1,710 Mean 4,704 Cfsm 5.06 In. 68.65 Ac-ft 3,405,000

Peak discharge (base, 16,000 cfs).-Jan. 9 (9 a.m.) 20,300 cfs (7.53 ft); Jan. 12 (11 p.m.) 16,100 cfs (6.41 ft); Jan. 18 (4:30 p.m.) 51,800 cfs (15.03 ft); Feb. 3 (1 p.m.) 27,500 cfs (9.33 ft); Feb. 6 (2:30 a.m.) 25,500 cfs (8.82 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and combined records for stations at McKenzie Bridge, South Fork McKenzie River near Rainbow, and Blue River near Blue River.

Gate Creek at Vida, Oreg.

Location.--Lat 44°08'45", long. 122°34'15", in sec. 28, T. 16 S., R. 2 E., on right bank at Vida 300 ft downstream from bridge on U.S. Highway 126 and 1,000 ft upstream from mouth.

Drainage area.--47.6 sq mi.

Records available.--June 1951 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 764.56 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Extremes.--Maximum discharge during year, 3,760 cfs Jan. 18 (gage height, 9.38 ft), from rating curve extended above 1,600 cfs by logarithmic plotting; minimum, 12 cfs Nov. 26, 27.

1951-53: Maximum discharge, that of Jan. 18, 1953; minimum, that of Nov. 26, 27, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No diversion or regulation above station.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 13 to Jan. 7)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
1.6	10	3.5	290	1.7	18	4.0	445
1.9	22	4.0	445	2.1	46	5.0	840
2.2	46	5.0	840	2.5	91	7.0	1,930
2.5	82	7.2	2,050	3.0	180	9.0	3,440
3.0	172			3.5	300		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	20	35	188	a1,200	250	312	328	210	83	39	32
2	*16	18	a90	552	a1,100	220	*282	295	190	80	38	31
3	16	18	a60	344	a1,800	200	265	250	174	77	38	30
4	16	17	a90	250	a1,600	186	255	220	164	73	39	28
5	16	17	*116	194	a1,400	178	245	196	168	72	40	28
6	16	17	88	164	a1,600	168	238	180	250	70	42	28
7	16	17	395	201	a1,400	166	228	190	407	67	38	28
8	16	17	196	390	a1,300	176	208	275	448	65	37	28
9	17	17	121	940	a900	174	192	335	335	63	35	27
10	17	17	445	552	a600	174	180	310	278	62	34	26
11	17	24	317	431	a500	186	176	258	248	60	32	25
12	17	41	377	*692	a420	225	200	220	230	59	31	25
13	17	45	245	804	a360	222	282	194	208	58	31	24
14	17	43	172	720	a310	208	288	180	188	58	30	23
15	17	32	132	496	a300	218	258	178	174	*56	30	23
16	17	18	106	1,060	a450	371	258	164	160	54	30	23
17	17	16	88	2,010	a1,500	401	260	154	150	51	30	22
18	17	15	76	3,400	a1,000	401	238	192	138	50	29	22
19	17	14	71	2,020	a700	456	230	335	136	50	29	22
20	*17	14	69	1,730	a550	456	232	318	129	48	29	22
21	17	14	84	a1,400	a460	524	225	356	120	48	30	22
22	17	13	164	a1,000	a380	1,080	218	353	114	47	29	22
23	18	13	134	a750	a320	1,040	205	345	107	46	30	23
24	22	13	100	a550	*290	970	184	389	102	46	32	22
25	19	13	82	a600	275	880	174	*332	99	44	*33	22
26	18	13	71	a700	265	652	174	308	97	44	81	21
27	18	13	66	a500	272	512	215	431	92	43	71	21
28	18	13	61	a450	280	456	228	377	94	42	45	*34
29	18	13	123	a650	-	389	250	318	92	41	59	27
30	19	13	206	a800	-	362	320	272	88	40	40	47
31	20	-	160	a1,000	-	350	-	240	-	40	35	-
Total	536	568	4,540	25,538	21,532	12,249	7,020	8,493	5,390	1,737	1,166	778
Mean	17.3	18.9	146	824	769	395	234	274	180	56.0	37.6	25.9
Cfsm	0.363	0.397	3.07	17.3	16.2	8.30	4.92	5.76	3.78	1.18	0.79	0.54
In.	0.42	0.44	3.55	19.95	16.82	9.57	5.48	6.64	4.21	1.36	0.91	0.61
Ac-ft	1,060	1,130	9,000	50,650	42,710	24,300	13,920	16,850	10,690	3,450	2,310	1,540

Calendar year 1952: Max 1,820 Min 13 Mean 168 Cfsm 3.53 In. 48.15 Ac-ft 122,200
Water year 1952-53: Max 3,400 Min 13 Mean 245 Cfsm 5.15 In. 69.96 Ac-ft 177,600

Peak discharge (base, 1,800 cfs).--Jan. 18 (12:30 p.m.) 3,760 cfs (9.38 ft); Feb. 3 (time and discharge unknown); Feb. 5 (time and discharge unknown).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for Calapooya River at Holley and Blue River above Quentin Creek.

McKenzie River near Coburg, Oreg.

Location.--Lat 44°06'45", long. 123°02'45", in NE¼NE¼ sec. 9, T. 17 S., R. 3 W., on left bank at downstream side of Armitage Bridge, 2 miles southeast of Coburg and 3 miles upstream from mouth.

Drainage area.--1,310 sq mi, approximately.

Records available.--October 1944 to September 1953. Gage-height records collected at same site December 1943 to April 1944 are contained in files of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 396.32 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 24, 1944, wire-weight gage at same site and datum.

Average discharge.--9 years, 6,095 cfs.

Extremes.--Maximum discharge during year, 78,500 cfs Jan. 19 (gage height, 16.87 ft), from rating curve extended above 40,000 cfs by logarithmic plotting; minimum, 1,750 cfs Nov. 20 (gage height, 0.73 ft).
1944-53: Maximum discharge, 88,200 cfs Dec. 29, 1945 (gage height, 17.36 ft), from rating curve extended above 37,000 cfs; minimum daily, 1,310 cfs Oct. 29, 1944.

Remarks.--Records excellent. Slight diurnal fluctuation caused by log ponds and powerplants upstream. Water supply for city of Eugene is diverted about 10 miles upstream; small diversions above station for irrigation.

Cooperation.--Telemark gage readings obtained once daily during fall and winter months by employees of U. S. Weather Bureau.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 17, 18)

Oct. 1 to Jan. 18		Jan. 19 to Sept. 30	
0.7	1,710	0.9	1,850
4.0	6,850	4.0	6,850
6.0	11,900	6.0	12,600
10.0	26,400	10.0	31,300
17.0	64,400	15.0	64,000

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,960	1,940	2,010	4,380	17,200	6,260	6,630	8,100	7,280	4,340	2,630	2,400
2	1,920	1,940	2,410	7,890	15,900	5,920	6,220	7,580	6,930	4,340	2,630	2,320
3	1,890	1,850	2,760	8,400	33,000	5,710	5,940	6,970	6,630	4,340	2,630	2,270
4	1,900	1,880	2,460	6,790	*32,800	5,460	5,780	6,750	6,340	4,330	2,640	2,190
5	1,920	1,880	3,270	5,640	26,000	5,270	5,730	*7,150	6,210	4,250	2,640	2,160
6	1,900	1,880	3,150	5,030	36,000	5,110	5,750	7,780	6,670	4,200	2,660	2,140
7	1,880	1,900	5,110	*4,970	29,600	5,080	5,680	7,980	8,920	4,150	2,720	2,140
8	1,890	1,880	5,660	6,860	28,000	5,220	5,450	8,280	10,700	4,140	2,620	2,160
9	1,900	1,850	4,320	19,700	19,900	5,530	5,180	8,100	9,360	3,990	2,540	2,140
10	1,900	1,870	5,880	18,200	15,400	5,730	5,000	7,550	8,650	3,830	2,510	*2,120
11	1,900	1,920	6,060	12,800	12,600	5,800	4,890	6,950	7,920	3,770	2,440	2,120
12	1,900	2,090	7,250	15,700	10,600	6,150	4,920	6,510	7,750	3,670	2,390	2,130
13	1,880	2,270	5,990	21,100	9,420	6,120	5,140	6,300	7,300	3,310	2,380	2,130
14	1,880	2,390	4,970	18,000	8,680	5,820	5,290	6,320	6,890	3,560	2,270	2,100
15	1,870	2,350	4,480	13,500	8,250	5,680	5,080	6,370	6,610	3,530	2,360	2,070
16	*1,850	2,040	4,040	14,700	8,250	6,430	5,110	6,260	6,360	3,340	2,390	2,000
17	1,810	1,970	3,690	29,700	18,600	7,580	5,510	6,040	*6,220	3,300	2,330	2,000
18	1,850	1,940	3,330	58,900	17,500	*7,250	5,610	6,130	6,120	3,260	2,300	2,000
19	1,870	1,890	3,240	62,100	12,800	7,800	5,590	9,240	5,920	3,230	2,300	2,000
20	1,850	*1,790	3,100	*42,800	10,500	8,950	5,990	11,200	5,750	3,200	2,300	1,920
21	1,850	1,830	3,150	33,900	9,150	9,420	6,590	10,400	5,430	3,100	2,300	2,020
22	1,850	1,870	3,630	23,200	8,500	11,800	6,750	9,930	5,320	3,040	2,300	2,060
23	1,880	1,880	3,820	18,800	7,800	13,900	7,170	9,800	5,220	3,000	2,300	2,000
24	1,940	1,870	3,450	15,200	7,250	13,000	6,870	9,750	5,030	2,990	2,320	2,000
25	1,890	1,850	3,150	13,500	6,810	13,400	6,320	8,850	4,870	2,930	2,320	1,960
26	1,880	1,840	3,000	13,600	6,490	10,900	6,610	8,320	4,780	2,930	2,920	1,960
27	1,880	1,840	2,910	12,200	6,370	9,300	7,620	9,990	4,700	2,870	3,160	1,960
28	1,890	1,830	2,790	*10,700	6,390	8,480	8,820	9,870	4,660	2,800	2,690	2,050
29	1,880	1,830	3,020	12,300	-	7,750	8,120	9,000	4,650	*2,760	2,750	2,140
30	1,900	1,830	4,400	13,300	-	7,250	8,150	8,480	4,600	2,720	2,660	2,020
31	1,920	-	4,590	14,800	-	7,170	-	7,800	-	2,680	2,450	-
Total	58,480	57,990	121,090	558,660	429,760	235,240	183,510	249,550	193,790	108,200	77,850	62,680
Mean	1,886	1,933	3,906	18,020	15,350	7,588	6,117	8,050	6,460	3,490	2,511	2,089
Cfsm	1.44	1.48	2.98	13.8	11.7	5.79	4.67	6.15	4.93	2.66	1.92	1.59
In.	1.66	1.65	3.44	15.86	12.20	6.68	5.21	7.08	5.50	3.07	2.21	1.78
Ac-ft	116,000	115,000	240,200	‡1,108	852,400	466,600	364,000	495,000	384,400	214,600	154,400	124,300

Calendar year 1952: Max 27,800 Min 1,790 Mean 5,147 Cfsm 3.93 In. 53.50 Ac-ft 3,737,000
Water year 1952-53: Max 62,100 Min 1,790 Mean 6,402 Cfsm 4.89 In. 66.34 Ac-ft 4,635,000

Peak discharge (base, 24,000 cfs).--Jan. 9 (5 p.m.) 26,800 cfs (10.10 ft); Jan. 19 (1:30 a.m.) 78,500 cfs (16.87 ft); Feb. 3 (10:30 p.m.) 42,200 cfs (11.87 ft); Feb. 6 (11 a.m.) 39,500 cfs (11.42 ft).

* Discharge measurement made on this day.
‡ Expressed in thousands.

Willamette River at Harrisburg, Oreg.

Location.--Lat 44°16'05", long. 123°10'25", in SW¼NE¼ sec. 16, T. 15 S., R. 4 W., on right bank 10 ft downstream from State highway bridge at Harrisburg and at mile 162.9.

Drainage area.--3,420 sq mi, approximately.

Records available.--October 1944 to September 1953. Gage-height records (October to April each year) collected at same site since December 1927 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 290.07 ft above mean sea level, datum of 1929. Oct. 1 to Nov. 14, 1944, wire-weight gage on bridge 10 ft upstream at same datum.

Average discharge.--9 years, 12,800 cfs.

Extremes.--Maximum discharge during year, 149,000 cfs Jan. 19 (gage height, 17.95 ft); minimum, 2,420 cfs Nov. 9-11.

1944-53: Maximum discharge, 210,000 cfs Dec. 29, 1945 (gage height, 19.69 ft), from rating curve extended above 89,000 cfs; minimum, 1,990 cfs Oct. 30, 1944.

Flood in 1861 reached a stage of about 21 ft (present site and datum), from information by local residents. Flood of Jan. 1, 1943, reached a stage of 19.1 ft (present datum), from U. S. Weather Bureau records.

Remarks.--Records good. Many small diversions above station for irrigation; about 15 cfs diverted from McKenzie River for city of Eugene water supply. Flow regulated at times by Cottage Grove Reservoir (see p. 125) and Dorena Reservoir (see p. 128).

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 8		Jan. 9 to Sept. 30			
2.2	2,250	2.0	3,200	13.0	70,000
3.0	4,450	4.0	8,750	15.0	96,000
5.0	12,000	6.0	17,000	18.0	150,000
7.0	22,000	9.0.	34,700		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,080	2,720	2,720	8,320	33,000	12,200	13,500	16,000	15,700	6,980	4,080	4,250
2	3,020	2,700	3,220	13,500	32,600	11,300	12,400	19,300	*14,800	7,100	4,150	4,280
3	2,980	2,620	4,450	19,600	55,700	10,500	11,600	14,000	13,900	6,740	4,200	4,220
4	2,980	2,600	4,180	15,100	85,100	9,840	10,900	12,400	12,900	7,040	4,420	4,150
5	3,080	2,580	5,100	11,900	*65,800	9,280	10,700	*12,500	12,100	7,190	4,480	4,080
6	3,120	2,520	6,010	*10,400	75,300	8,920	10,700	13,800	12,900	7,040	4,480	4,100
7	3,080	2,500	8,720	9,800	71,000	8,690	10,600	14,800	17,500	6,950	4,400	4,120
8	3,100	2,500	18,100	15,200	67,000	8,860	10,200	15,500	27,300	6,950	4,200	4,100
9	3,100	2,480	13,000	38,400	52,400	9,450	9,620	15,800	25,400	6,770	4,080	3,980
10	3,100	2,420	11,400	60,100	39,500	9,980	9,240	15,800	21,600	6,560	3,980	*3,920
11	3,100	2,450	21,500	37,700	29,300	10,500	8,690	14,100	18,800	6,290	4,080	3,880
12	3,180	2,620	17,500	33,700	23,800	11,100	8,570	12,900	17,100	6,080	4,080	3,800
13	3,180	2,950	16,000	51,500	20,400	12,100	8,750	11,700	16,200	5,990	4,020	3,750
14	3,180	3,250	11,900	52,200	18,000	11,200	9,240	11,400	14,600	5,810	3,980	3,700
15	3,150	3,370	9,800	34,800	16,900	10,800	8,860	11,500	13,600	5,690	3,980	3,700
16	*3,250	3,120	8,000	30,200	15,900	11,000	8,780	11,300	12,800	5,450	4,080	3,600
17	3,280	2,800	7,020	56,900	26,200	13,800	8,820	10,700	*12,200	5,250	4,020	3,620
18	3,200	2,720	6,180	95,700	43,000	*13,600	9,450	10,600	11,800	5,150	3,980	3,600
19	3,120	*2,680	5,660	134,000	31,900	15,800	9,700	14,400	11,500	5,080	3,920	3,580
20	3,080	2,580	5,340	92,100	23,500	21,000	10,200	24,800	11,000	5,000	3,920	3,500
21	3,050	2,550	5,380	80,200	19,600	23,200	10,700	25,000	10,200	4,900	3,950	3,550
22	3,050	2,600	6,080	58,800	17,000	25,700	12,200	23,500	9,800	4,700	3,900	3,520
23	3,050	2,580	7,130	46,900	15,800	31,600	13,400	22,000	9,450	4,680	3,900	3,420
24	3,100	2,580	6,430	38,900	14,100	29,400	13,300	24,700	9,000	4,620	3,950	3,400
25	3,000	2,580	5,760	34,500	13,000	32,700	12,000	23,600	8,570	4,500	4,020	3,300
26	2,880	2,550	5,240	35,100	12,000	28,300	10,000	20,800	8,390	4,450	4,400	3,250
27	2,820	2,550	5,030	33,300	11,600	22,600	13,200	24,100	8,090	4,420	5,220	3,280
28	2,800	2,520	4,890	26,900	11,800	19,100	17,400	25,500	7,430	4,320	4,950	3,400
29	2,780	2,500	4,860	29,000	-	17,200	17,500	22,100	7,220	*4,150	4,750	3,520
30	2,700	2,520	6,600	27,900	-	15,300	15,900	19,500	7,250	4,180	4,780	3,520
31	2,720	-	9,160	29,600	-	14,800	-	17,100	-	4,120	4,420	-
Total	94,310	79,710	252,360	‡1,262.22	941,200	489,820	336,120	531,200	399,100	174,150	130,770	112,090
Mean	3,042	2,657	8,141	40,720	33,610	15,800	11,200	17,140	13,300	5,618	4,218	3,736
Cfsm	0.889	0.777	2.38	11.9	9.83	4.62	3.27	5.01	3.89	1.64	1.23	1.09
In.	1.03	0.87	2.74	13.73	10.23	5.33	3.66	5.78	4.34	1.89	1.42	1.22
Ac-ft	187,100	158,100	500,500	‡2,504	‡1,867	971,500	666,700	‡1,054	791,600	345,400	259,400	222,300

Calendar year 1952: Max 67,500 Min 2,420 Mean 10,470 Cfsm 3.06 In. 41.70 Ac-ft 7,603,000
Water year 1952-53: Max 134,000 Min 2,420 Mean 13,160 Cfsm 3.85 In. 52.24 Ac-ft 9,528,000

Peak discharge (base, 59,000 cfs).--Jan. 10 (3:30 a.m.) 66,600 cfs (12.66 ft); Jan. 19 (7:30 a.m.) 149,000 cfs (17.95 ft); Feb. 4 (7 a.m.) 93,200 cfs (14.80 ft).

* Discharge measurement made on this day.

‡ Expressed in thousands.

Long Tom River near Noti, Oreg.

Location.--Lat 44°03'00", long. 123°25'30", in sec. 33, T. 17 S., R. 6 W., on left bank an eighth of a mile upstream from railroad bridge, 1 mile downstream from Noti Creek, and 1½ miles southeast of Noti.

Drainage area.--88 sq mi, approximately.

Records available.--October 1935 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 388.76 ft above mean sea level (levels by U. S. Weather Bureau). Prior to Nov. 6, 1940, staff gage at same site and datum.

Average discharge.--18 years, 238 cfs.

Extremes.--Maximum discharge during year, 3,790 cfs Jan. 19 (gage height, 17.69 ft); minimum, 11 cfs Oct. 5, 6.
1935-53: Maximum discharge, 4,930 cfs Feb. 18, 1949 (gage height, 18.62 ft); minimum observed, 7 cfs Sept. 25-27, 1939.

Remarks.--Records good. No diversion above station. Slight diurnal fluctuation caused by log pond above Noti.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 8-17, June 11-24)

0.6	14	7.0	692
.8	23	10.0	1,150
1.0	36	13.0	1,780
2.0	123	17.0	3,260
4.0	324		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	21	35	345	580	287	302	345	174	78	29	35
2	12	20	101	563	579	267	283	313	162	74	28	34
3	13	20	165	538	934	254	267	274	154	70	30	*30
4	12	18	102	411	1,240	234	251	247	142	65	36	28
5	12	18	252	326	1,080	222	238	226	142	62	41	26
6	12	18	277	273	1,130	211	*224	209	164	61	39	28
7	12	18	556	*296	982	205	207	206	156	58	36	29
8	12	22	524	541	1,010	199	216	248	149	55	35	30
9	13	25	424	*1,430	811	193	207	224	145	56	35	28
10	13	19	438	1,030	660	202	195	200	136	53	30	26
11	14	18	436	653	568	226	196	185	124	50	29	26
12	14	22	328	762	490	266	211	*176	118	49	27	27
13	*14	43	255	948	438	255	240	169	115	48	25	27
14	14	66	199	934	410	227	222	169	109	50	24	25
15	13	106	161	723	426	265	201	164	104	47	25	24
16	13	45	138	961	*466	580	206	158	100	45	28	24
17	13	29	124	1,660	1,140	840	234	152	*96	45	27	23
18	13	26	116	2,530	1,450	683	226	161	93	40	25	23
19	15	*23	119	3,240	961	601	213	226	92	39	24	22
20	16	23	105	2,600	707	572	200	201	92	39	23	21
21	16	22	104	2,440	585	832	186	229	88	38	25	21
22	16	21	152	1,480	514	1,040	177	292	87	43	24	22
23	16	21	159	1,050	460	990	173	318	83	38	24	24
24	17	22	140	801	412	779	166	310	82	37	25	23
25	18	22	131	763	374	674	160	271	80	38	32	22
26	18	21	119	985	335	551	191	276	82	38	62	22
27	17	21	124	1,050	308	483	321	265	81	35	60	22
28	17	21	123	860	301	435	317	238	85	*34	46	24
29	17	21	179	754	-	386	304	220	89	38	53	29
30	19	22	384	645	-	358	345	202	84	31	45	32
31	20	-	404	580	-	335	-	187	-	31	38	-
Total	454	814	6,872	32,172	19,351	13,652	6,879	7,061	3,408	1,485	1,030	777
Mean	14.6	27.1	222	1,040	691	440	229	228	114	47.9	33.2	25.9
Cfsm	0.166	0.308	2.52	11.8	7.85	5.00	2.60	2.59	1.30	0.544	0.377	0.294
In.	0.19	0.34	2.90	13.60	8.18	5.77	2.91	2.98	1.44	0.63	0.44	0.33
Ac-ft	900	1,610	13,630	63,810	38,380	27,080	13,640	14,000	6,760	2,950	2,040	1,540

Calendar year 1952: Max 2,010 Min 12 Mean 204 Cfsm 2.32 In. 31.55 Ac-ft 148,100
Water year 1952-53: Max 3,240 Min 12 Mean 257 Cfsm 2.92 In. 39.71 Ac-ft 186,300

Peak discharge (base, 1,300 cfs).--Jan. 9 (4:30 p.m.) 1,590 cfs (12.55 ft); Jan. 19 (4 a.m.) 3,790 cfs (17.69 ft); Feb. 4 (5 to 6 a.m.) 1,340 cfs (11.03 ft); Feb. 18 (8 a.m.) 1,580 cfs (12.21 ft).
* Discharge measurement made on this day.

Coyote Creek near Crow, Oreg.

Location.--Lat 44°01'19", long. 123°15'17", in NE¼ sec. 11, T. 18 S., R. 5 W., on right bank just upstream from backwater of Fern Ridge Reservoir, 1 mile downstream from Spencer Creek and 5 miles northeast of Crow.

Drainage area.--94 sq mi, approximately.

Records available.--June 1940 to September 1953.

Gage.--Water-stage recorder and concrete control. Datum of gage is 374.0 ft above mean sea level (Corps of Engineers benchmark). Prior to Aug. 31, 1940, staff gages near same site at different datums.

Average discharge.--13 years, 182 cfs.

Extremes.--Maximum discharge during year, 5,460 cfs Jan. 18 (gage height, 12.89 ft); minimum, 0.1 cfs Oct. 1-5, 11-14, 19.
1940-53: Maximum discharge, 9,260 cfs Dec. 28, 1945 (gage height, 14.13 ft), from rating curve extended above 4,700 cfs; no flow at times in August and September 1940.

Remarks.--Records good except those between 10 and 20 cfs, which are fair, and those below 10 cfs, which are poor.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.2	0.1	4.0	215
.3	.4	7.0	485
.4	1.2	9.0	778
.5	2.6	9.5	910
.6	5.4	10.0	1,180
.7	11	11.0	2,150
1.0	30	12.0	3,600
2.0	81		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.1	1.2	3.4	206	314	126	146	227	131	21	3.2	5.9
2	.1	1.7	13	472	317	110	127	195	111	21	3.2	4.9
3	.1	1.8	36	445	664	101	114	158	98	20	3.6	*3.8
4	.1	1.8	27	306	1,010	89	105	135	85	19	3.6	3.4
5	.1	1.8	48	225	942	82	96	117	80	18	4.2	3.4
6	.3	1.7	112	182	787	74	*85	100	115	18	4.5	3.4
7	.3	2.3	284	*212	679	70	83	101	133	16	5.4	3.2
8	.3	1.7	548	568	660	66	82	119	118	14	5.4	3.2
9	.3	1.5	632	2,110	540	64	72	116	111	13	4.2	3.0
10	.2	1.3	670	1,350	412	68	66	93	117	13	3.6	3.4
11	.1	1.3	574	778	318	89	61	*73	95	14	3.4	3.4
12	.1	1.2	453	660	257	116	64	65	74	13	3.2	3.4
13	*.1	1.5	265	778	215	110	66	59	62	12	3.0	3.4
14	.1	3.4	179	838	193	99	57	62	53	11	2.8	3.0
15	.2	9.1	136	684	225	113	50	56	46	10	2.3	3.4
16	.2	8.0	107	731	273	248	54	50	40	10	2.1	3.8
17	.2	5.4	89	1,530	*754	481	76	46	*35	9.1	2.3	3.0
18	.2	3.4	73	3,050	1,390	438	72	49	30	9.1	2.0	2.6
19	.1	*2.6	74	3,270	883	449	64	95	29	8.6	2.1	2.1
20	.3	2.4	74	2,400	583	529	58	92	28	7.0	2.8	2.0
21	.3	2.3	70	2,070	412	774	50	124	27	7.0	3.0	2.1
22	.4	2.0	120	1,120	318	898	46	156	25	7.0	3.0	2.0
23	.5	1.8	118	740	265	748	46	239	25	6.5	2.3	2.1
24	.6	2.1	101	514	220	581	42	298	23	5.9	2.1	1.8
25	.5	2.1	88	442	188	524	40	232	22	5.9	2.4	1.8
26	1.4	2.0	79	731	163	385	64	343	22	6.5	3.2	2.3
27	.9	2.0	92	907	142	304	155	420	21	5.4	5.4	2.6
28	1.2	2.1	80	716	137	262	158	342	21	*4.9	7.0	2.1
29	1.2	2.3	98	528	-	221	172	265	21	4.9	9.1	2.1
30	1.3	2.3	211	395	-	197	209	202	22	4.9	7.0	2.3
31	1.2	-	222	317	-	179	-	164	-	4.2	6.5	-
Total	13.0	76.1	5,676.4	29,275	13,261	8,595	2,580	4,793	1,820	339.9	117.9	88.9
Mean	0.42	2.54	183	944	474	277	86.0	155	60.7	11.0	3.80	2.96
Cfsm	0.0045	0.027	1.95	10.0	5.04	2.95	0.915	1.65	0.646	0.117	0.040	0.031
In.	0.005	0.03	2.25	11.58	5.25	3.40	1.02	1.90	0.72	0.13	0.05	0.04
Ac-ft	26	151	11,260	58,070	26,300	17,050	5,120	9,510	3,610	674	234	176

Calendar year 1952: Max 1,450 Min 0.1 Mean 130 Cfsm 1.38 In. 18.80 Ac-ft 94,310
Water year 1952-53: Max 3,270 Min 0.1 Mean 183 Cfsm 1.95 In. 26.38 Ac-ft 132,200

Peak discharge (base 1,600 cfs).--Jan. 9 (7 p.m.) 2,390 cfs (11.19 ft); Jan. 18 (10 p.m.) 5,460 cfs (12.89 ft).
* Discharge measurement made on this day.

Fern Ridge Reservoir near Elmira, Oreg.

Location.--Lat 44°07'20", long. 123°17'55", near center of sec. 4, T. 17 S., R. 5 W., in control house at spillway section of dam across Long Tom River and Coyote Creek, 4½ miles northeast of Elmira.

Drainage area.--252 sq mi, not including Amazon Creek basin.

Records available.--October 1941 to September 1953.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

Extremes.--Maximum contents during year, 101,500 acre-ft May 18, 24 (elevation, 373.53 ft); minimum, 6,690 acre-ft Dec. 13 (elevation, 352.80 ft).
1941-53: Maximum contents, 105,400 acre-ft Jan. 1, 1943 (elevation, 373.94 ft); minimum since first filling in 1942, 189 acre-ft Nov. 11, 1950 (elevation 344.00 ft).

Remarks.--Reservoir is formed by earth-fill dam with concrete outlet and spillway, completed in 1941 by Corps of Engineers; storage began Nov. 13, 1941. Capacity, 101,200 acre-ft between elevations 340 ft (sill of outlet gate) and 373.5 ft (normal maximum operating pool level); dead storage, 23 acre-ft below elevation 340 ft. Reservoir used for flood control and improvement of navigation. Capacity table computed by Geological Survey on basis of areas furnished by Corps of Engineers. Beginning in November 1951, most of flow of Amazon Creek has been diverted in SE¼ sec. 29, T. 17 S., R. 4 W., and discharged into Fern Ridge Reservoir; drainage area at point of diversion, 21.3 sq mi.

Cooperation.--Water-stage recorder inspected by employees of Corps of Engineers.

Contents, at 12 p.m., in acre-feet, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30,350	10,470	7,090	7,750	39,180	39,130	72,720	94,190	100,600	101,000	96,990	86,470
2	28,760	10,280	7,440	7,900	35,640	40,060	73,310	95,360	100,800	101,000	96,530	85,720
3	27,200	10,090	7,360	7,620	34,390	40,760	74,060	96,350	100,900	101,000	96,080	85,380
4	25,620	9,910	7,450	7,270	33,420	41,470	74,810	97,170	101,000	100,900	95,810	84,880
5	24,250	9,750	7,450	6,910	32,820	42,150	75,420	97,810	100,900	100,900	95,540	84,220
6	23,080	9,550	7,980	6,840	31,090	42,680	76,030	98,720	100,100	100,900	95,180	83,730
7	21,860	9,340	8,000	7,420	29,260	43,330	76,720	99,280	100,000	100,800	94,820	82,820
8	20,700	9,160	8,160	9,060	26,760	43,930	77,260	100,100	100,100	100,800	94,370	82,010
9	19,390	8,970	7,750	11,930	23,710	44,480	77,720	100,500	100,500	100,800	94,010	81,520
10	18,230	8,820	7,890	12,890	19,930	45,300	78,190	100,900	100,700	100,600	93,750	81,040
11	17,100	8,650	7,350	11,320	19,330	46,080	78,740	101,000	100,800	100,500	93,300	80,080
12	16,230	8,550	6,910	9,910	20,620	47,080	79,450	101,100	100,800	100,300	92,860	78,890
13	15,390	8,450	6,810	8,910	21,710	47,830	80,080	100,900	100,800	100,300	92,510	77,800
14	14,630	8,620	6,980	8,160	22,870	48,750	80,640	100,800	100,800	100,000	91,980	76,720
15	13,860	8,390	7,030	8,020	24,160	49,970	81,200	100,800	100,700	99,830	91,630	75,420
16	13,440	8,060	7,120	8,060	25,880	52,580	81,930	100,900	100,500	99,650	91,280	74,210
17	13,220	7,670	7,250	10,810	28,130	56,280	82,500	101,000	100,200	99,650	90,750	73,090
18	13,000	7,280	7,330	25,550	29,910	58,760	83,150	100,800	100,300	99,460	90,410	71,840
19	12,830	7,090	7,350	43,880	29,470	60,610	83,730	100,200	100,400	99,280	90,060	70,530
20	12,610	7,030	7,220	58,890	28,800	62,180	84,220	100,300	100,500	99,090	89,630	69,450
21	12,420	6,980	7,280	67,050	29,870	63,110	84,640	100,300	100,600	98,910	89,370	67,890
22	12,230	7,030	7,410	68,740	31,050	62,970	85,380	100,200	100,700	98,630	88,940	66,150
23	12,070	7,040	7,510	67,120	32,240	62,840	85,380	101,200	100,700	98,450	88,600	64,240
24	11,880	7,060	7,450	63,980	33,500	63,980	85,720	101,100	100,700	98,450	88,340	62,770
25	11,680	7,060	7,280	60,940	34,760	65,060	86,220	100,700	100,700	98,170	88,510	61,000
26	11,500	7,040	7,210	59,710	35,970	66,020	87,400	100,700	100,800	98,080	88,170	59,270
27	11,300	7,010	7,190	57,950	37,130	67,260	88,770	99,920	100,800	97,990	87,830	57,510
28	11,080	7,000	7,270	55,550	38,190	69,020	89,800	99,830	101,100	97,990	87,830	55,910
29	10,930	7,000	7,280	52,010	-	70,530	91,360	100,300	101,200	97,810	87,490	54,110
30	10,770	7,070	7,250	47,880	-	71,690	92,860	100,900	101,200	97,530	87,230	52,760
31	10,660	-	7,250	43,680	-	72,280	-	100,800	-	97,260	86,980	-

Monthly elevation and contents, water year October 1952 to September 1953

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept. 30	362.72	31,930	-
Oct. 31	355.18	10,660	-21,270
Nov. 30	353.06	7,070	-3,590
Dec. 31	353.18	7,250	+180
Calendar year 1952	-	-	-750
Jan. 31	365.39	43,680	+36,430
Feb. 28	364.23	38,190	-5,490
Mar. 31	370.04	72,280	+34,090
Apr. 30	372.58	92,860	+20,580
May 31	373.45	100,800	+7,940
June 30	373.50	101,200	+400
July 31	373.07	97,260	-3,940
Aug. 31	371.90	86,980	-10,280
Sept. 30	367.07	52,760	-34,220
Water year 1952-53	-	-	+20,830

† Elevation at 12 p.m.

Long Tom River below Fern Ridge Dam, near Smithfield, Oreg.

Location.--Lat 44°07'25", long. 123°17'50", in SE¼ sec. 4, T. 17 S., R. 5 W., on left bank in canalized river channel, 1,000 ft downstream from Fern Ridge Dam, which impounds runoff of Long Tom River and Coyote Creek, and 2½ miles south of Smithfield.

Drainage area.--252 sq mi, not including Amazon Creek basin.

Records available.--August 1939 to September 1953. Prior to October 1943, published as "at Smithfield."

Gage.--Water-stage recorder and masonry control. Datum of gage is 332.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Sept. 21, 1939, staff gage and Sept. 21, 1939, to Sept. 13, 1943, water-stage recorder at site 2½ miles downstream at datum 11.09 ft lower.

Average discharge.--14 years, 530 cfs (adjusted for diversion to Coyote Creek since 1943).

Extremes.--Maximum discharge during year, 3,630 cfs Jan. 23; minimum daily, 19 cfs Nov. 23, 24.

1939-53: Maximum discharge, 11,500 cfs Jan. 1, 1943 (gage height, 15.12 ft, site and datum then in use); minimum daily, 2 cfs Aug. 7, 1941.

Remarks.--Records good. A few small diversions above station. Records include diversion for irrigation and stockwater to Coyote Creek channel through a 24-inch concrete pipe 600 ft long. The diversion is several hundred feet upstream and point of return to Long Tom River about 2½ miles downstream. Record for Coyote Creek is based on daily staff-gage readings and occasional measurements. Fern Ridge Dam, 1,000 ft above station, was completed in 1941, and has regulated flow since Nov. 13, 1941 (see preceding page). Discharge not adjusted for storage or release from Fern Ridge Dam, as evaporation from reservoir at times exceeds natural flow and diversions, and beginning in November 1951 most of flow of Amazon Creek has been diverted in SE¼ sec. 29, T. 17 S., R. 4 W., and discharged into Fern Ridge Reservoir; drainage area at point of diversion, 21.3 sq mi.

Revisions (water years).--WSP 1248: 1940-41, 1948.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	783	107	66	742	3,370	52	369	49	410	105	145	225
2	798	107	123	1,230	3,400	52	197	49	201	50	168	273
3	790	107	210	1,350	3,350	52	83	48	204	49	166	*273
4	783	108	271	1,090	3,390	50	72	48	203	48	166	273
5	643	108	310	841	3,410	49	72	48	464	48	166	273
6	586	107	499	600	3,380	49	*70	47	809	47	166	273
7	580	105	951	*665	3,410	50	72	48	505	47	162	406
8	574	106	1,190	1,370	3,400	50	71	47	274	42	162	423
9	567	106	1,310	2,610	3,270	50	61	137	190	38	162	269
10	561	106	1,420	2,960	3,160	50	51	183	190	38	162	266
11	554	106	1,440	3,130	1,560	50	52	*179	189	38	162	447
12	408	103	1,140	2,950	374	50	51	225	189	36	166	585
13	*363	103	698	2,870	328	50	52	320	189	36	166	585
14	373	103	381	2,770	327	51	51	324	189	36	166	580
15	368	179	327	2,180	376	53	51	231	189	36	166	580
16	204	217	234	2,420	*480	53	50	183	189	36	166	580
17	110	214	180	2,540	1,770	56	50	183	*192	35	162	574
18	107	206	180	1,030	2,550	468	50	600	137	37	162	574
19	110	*107	229	40	2,930	698	50	692	57	37	162	568
20	107	47	264	35	2,200	1,160	52	379	57	36	162	568
21	107	25	264	1,590	907	1,860	52	484	57	36	162	768
22	107	20	261	2,890	553	2,580	52	577	57	36	162	860
23	107	19	264	3,200	376	2,280	50	424	57	37	162	860
24	107	19	291	3,390	227	1,410	50	861	54	37	162	854
25	107	24	319	3,360	107	1,200	49	863	54	35	163	854
26	107	28	288	3,400	54	818	50	1,130	52	35	163	875
27	107	28	256	3,440	50	416	50	1,310	50	*35	160	882
28	107	23	256	3,320	50	128	49	797	51	35	160	875
29	106	20	409	*3,450	-	71	50	295	51	35	160	875
30	106	20	737	3,360	-	279	49	242	114	35	160	861
31	106	-	737	3,360	-	369	-	438	-	75	160	-
Total	10,543	2,678	15,505	68,183	48,759	14,604	2,128	11,441	5,624	1,306	5,039	17,159
Mean	340	89.3	500	2,199	1,741	471	70.9	369	187	42.1	163	572
Ac-ft	20,910	5,310	30,750	135,200	96,710	28,970	4,220	22,690	11,160	2,590	9,990	34,030

Calendar year 1952: Max 3,380 Min 19 Mean 415 Ac-ft 300,900
Water year 1952-53: Max 3,450 Min 19 Mean 556 Ac-ft 402,500

* Discharge measurement made on this day.

Long Tom River at Monroe, Oreg.

Location.--Lat 44°18'50", long. 123°17'45", in NE¼ sec. 33, T. 14 S., R. 5 W., on left bank in canalized river channel at Monroe, 800 ft upstream from a concrete drop structure and just downstream from Shafer Creek.

Drainage area.--391 sq mi, not including Amazon Creek basin.

Records available.--November 1920 to September 1953 (1925-27 incomplete).

Gage.--Water-stage recorder and concrete control. Datum of gage is 270.00 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to Nov. 24, 1944, staff gages at various sites ranging from present site to 1½ miles downstream, at different datums.

Average discharge.--30 years (1921-25, 1927-53), 751 cfs.

Extremes.--Maximum discharge during year, 6,250 cfs Jan. 18 (gage height, 8.56 ft); minimum, 20 cfs Nov. 29 (gage height, 4.13 ft).
1920-53: Maximum discharge, 19,300 cfs Jan. 2, 1943 (gage height, 17.14 ft, site and datum then in use, from graph based on gage readings), includes some overflow from Willamette River near Junction City; no flow Oct. 20-22, 1944 (water filling pool at gage); minimum observed prior to regulation of flow, 7 cfs Sept. 29, Oct. 1, 1939.

Remarks.--Records excellent. A few small diversions above station. Flow regulated by Fern Ridge Reservoir beginning Nov. 13, 1941 (see p. 147). In 1943 and 1944, river channel was improved from outlet of Fern Ridge Reservoir to a point below Monroe. Beginning in November 1951, most of flow of Amazon Creek has been diverted in SE¼ sec. 29, T. 17 S., R. 4 W., and discharged into Fern Ridge Reservoir; drainage area at point of diversion, 21.3 sq mi.

Cooperation.--Gage-height record collected in cooperation with U. S. Weather Bureau. Water-stage recorder inspected by employee of Corps of Engineers.

Revisions (water years).--WSP 654: Drainage area. WSP 1248: 1923, 1927, 1928(M). Figure of yearly runoff for calendar year 1951 has been corrected to 36.44 inches, and that for water year 1951-52 to 30.04 inches, superseding figures published in WSP 1248.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

4.1	14	5.1	550
4.2	38	5.5	920
4.3	72	6.0	1,500
4.5	155	7.0	2,990
4.8	320	8.5	6,100

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	757	102	33	1,050	4,040	254	613	327	649	175	106	180
2	793	102	137	1,790	4,160	238	494	260	308	*80	160	249
3	784	99	200	2,000	4,960	222	284	227	296	72	155	249
4	775	99	296	1,450	4,720	205	238	200	290	68	*160	249
5	694	99	362	1,170	4,940	195	227	185	374	64	165	248
6	577	99	534	870	4,570	185	216	170	1,020	64	160	249
7	568	102	1,140	950	4,550	180	*205	170	703	68	155	308
8	568	102	1,530	2,030	4,530	175	200	195	438	64	155	422
9	559	102	1,600	5,010	4,120	165	190	254	302	57	150	266
10	550	102	*1,860	4,080	3,770	185	170	314	278	57	150	249
11	542	102	1,830	4,140	2,830	*216	165	296	272	57	150	329
12	478	102	1,500	4,360	811	249	165	278	254	54	150	526
13	355	106	990	4,430	676	232	185	414	249	51	150	526
14	348	119	534	4,160	658	195	170	422	244	51	155	526
15	341	150	430	3,250	739	300	160	355	238	47	160	526
16	278	216	369	3,980	1,020	730	165	266	232	47	160	*526
17	106	210	254	4,940	3,310	930	185	260	227	44	155	526
18	106	205	244	5,210	4,490	938	170	388	216	44	150	526
19	106	170	272	4,060	4,040	1,310	165	1,060	114	44	155	518
20	102	72	320	3,520	3,300	1,740	155	559	110	41	150	518
21	102	44	334	3,410	1,700	3,110	146	568	102	41	150	640
22	102	30	369	*4,430	1,090	3,750	142	910	99	41	150	784
23	102	25	362	4,220	840	3,500	142	712	95	41	155	775
24	102	23	362	4,260	640	2,470	137	1,060	91	44	160	775
25	102	23	383	4,360	414	2,030	128	1,320	87	44	165	775
26	102	30	369	5,010	308	1,550	160	*1,460	87	41	170	793
27	102	30	334	4,740	278	930	334	1,900	95	41	165	802
28	*102	30	334	4,280	272	559	272	1,290	91	41	160	802
29	102	25	502	4,320	-	383	260	624	87	38	160	793
30	102	25	1,130	4,040	-	464	320	369	87	38	155	802
31	102	-	1,040	3,980	-	658	-	526	-	41	155	-
Total	10,509	2,745	19,954	109,500	71,776	28,248	6,563	17,339	7,735	1,700	4,796	15,458
Mean	339	91.5	644	3,532	2,563	911	219	559	258	54.8	155	515
Ac-ft	20,840	5,440	39,580	217,200	142,400	56,030	13,020	34,390	15,340	3,370	9,510	30,660

Calendar year 1952: Max 4,870 Min 23 Mean 592 Ac-ft 429,800
Water year 1952-53: Max 5,210 Min 23 Mean 812 Ac-ft 587,800

* Discharge measurement made on this day.

Marys River near Philomath, Oreg.

Location.--Lat 44°31'35", long. 123°20'00", in SW¼ sec. 18, T. 12 S., R. 5 W., near mid-span on upstream side of bridge, 2 miles southeast of Philomath and 3½ miles upstream from Muddy Creek.

Drainage area.--159 sq mi (including drainage area of Evergreen Creek above road crossing 1½ miles south of station).

Records available.--October 1940 to September 1953.

Gage.--Wire-weight gage read twice daily, oftener during floods. Altitude of gage is 218 ft (by barometer).

Average discharge.--13 years, 456 cfs.

Extremes.--Maximum discharge, 7,920 cfs Jan. 18 (gage height, 20.8 ft, from graph based on gage readings); minimum observed, 4.7 cfs Oct. 15.
1940-53: Maximum discharge, 8,250 cfs Dec. 15, 1946 (gage height, 20.67 ft, from floodmark); maximum gage height, that of Jan. 18, 1953; minimum discharge observed, that of Oct. 15, 1952.

Remarks.--Records good. Records include flow of Evergreen Creek (tributary to Muddy Creek) at road crossing 1½ miles south, with which overflow from Marys River may at times be mingled. City of Corvallis diverts municipal supply from headwaters; other small diversions above station for irrigation of about 1,500 acres. Slight regulation by small storage reservoir on Rock Creek operated by city of Corvallis.

Revisions.--WSP 1218: Drainage area.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 19

1.8	4.7	7.0	576
1.9	7.0	11.0	1,430
2.1	14	15.0	2,500
2.5	35	18.0	3,670
3.0	70	19.0	4,380
4.0	156	20.1	6,010
5.0	264		

Jan. 20 to Sept. 30

2.0	13	5.0	285
2.5	40	7.0	620
3.0	71	11.0	1,430
4.0	163		

Note.--Same as preceding table above 11.0 ft.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.8	17	45	506	1,160	434	559	510	259	99	29	30
2	6.5	16	57	922	1,180	400	505	474	245	*92	29	26
3	6.1	15	97	936	1,560	369	453	424	227	85	29	21
4	5.6	14	133	696	1,600	336	409	375	220	80	*33	22
5	5.8	14	198	545	1,830	324	380	336	215	77	35	21
6	6.1	13	218	411	1,870	303	356	306	242	72	36	22
7	6.3	13	686	890	1,860	282	*348	296	250	71	32	22
8	6.3	13	592	1,880	1,620	277	326	378	230	64	30	21
9	7.4	13	*357	*4,040	1,350	257	304	369	215	63	32	22
10	7.4	13	594	2,540	1,150	266	290	327	203	60	28	19
11	6.5	14	521	1,780	970	*294	275	297	187	59	26	19
12	6.1	17	409	1,660	836	387	291	274	185	58	23	20
13	6.1	43	329	2,090	728	390	309	261	178	57	21	19
14	5.8	83	254	1,940	682	357	298	253	167	59	20	*16
15	5.4	60	206	1,530	812	502	281	237	159	56	18	15
16	5.8	50	173	1,970	1,000	1,280	292	230	150	55	21	16
17	5.8	33	150	2,560	2,290	1,560	309	218	139	50	20	15
18	5.6	26	131	4,480	2,620	1,330	292	237	134	45	18	15
19	6.4	22	128	6,010	1,930	1,280	275	290	134	45	18	16
20	6.8	20	124	5,990	1,480	1,270	263	255	138	43	19	15
21	7.7	16	125	4,800	1,180	1,520	252	278	124	42	17	14
22	7.7	17	205	*3,340	988	2,010	241	393	120	40	18	15
23	8.4	16	212	2,440	870	1,970	238	537	112	39	20	15
24	10	15	185	1,860	742	1,750	224	493	107	41	20	15
25	10	14	166	1,840	650	1,590	216	476	107	39	24	16
26	11	13	145	2,230	570	1,260	554	*500	104	39	72	15
27	12	13	157	2,070	518	1,050	500	444	101	36	52	15
28	*13	13	154	1,810	470	926	614	393	110	34	44	20
29	13	15	305	1,520	-	778	404	346	118	33	56	22
30	21	16	686	1,290	-	708	488	321	120	32	43	28
31	17	-	612	1,160	-	654	-	282	-	31	36	-
Total	255.4	657	8,354	67,836	34,516	26,114	10,546	10,810	5,000	1,696	919	567
Mean	8.24	21.9	269	2,188	1,233	842	352	349	167	54.7	29.6	18.9
Cfsm	0.052	0.138	1.69	13.8	7.75	5.30	2.21	2.19	1.05	0.344	0.186	0.119
In.	0.06	0.15	1.95	15.87	8.07	6.11	2.47	2.53	1.17	0.40	0.21	0.13
Ac-ft	507	1,300	16,570	134,600	68,460	51,800	20,920	21,440	9,920	3,360	1,820	1,120

Calendar year 1952: Max 3,570 Min 5.4 Mean 324 Cfsm 2.04 In. 27.76 Ac-ft 235,400
Water year 1952-53: Max 6,010 Min 5.4 Mean 458 Cfsm 2.88 In. 39.12 Ac-ft 331,800

Peak discharge (base, 2,500 cfs).--Jan. 9 (8 p.m.) 5,020 cfs (19.55 ft); Jan. 18 (about 12 p.m.) 7,920 cfs (20.8 ft); Feb. 18 (8 a.m.) 2,760 cfs (15.73 ft).
* Discharge measurement made on this day.

Calapooya River at Holley, Oreg.

Location (revised).--Lat 44°21'05", long. 122°47'10", in SE¼ sec. 15, T. 14 S., R. 1 W., on right bank a quarter of a mile southwest of Holley and 5 miles upstream from Brush Creek.

Drainage area.--105 sq mi.

Records available.--September 1935 to September 1953.

Gage.--Staff gage read once daily below, and two or more times daily above 3.0 ft gage height. Datum of gage is 527.20 ft above mean sea level, datum of 1929.

Average discharge.--18 years, 435 cfs.

Extremes.--Maximum discharge during year, 9,560 cfs Jan. 18 (gage height, 11.80 ft); minimum, 20 cfs Oct. 19, 21-23.
1935-53: Maximum discharge, 12,200 cfs Dec. 28, 1945 (gage height, 14.1 ft, from floodmark), from rating curve extended above 5,300 cfs by logarithmic plotting; minimum observed, 13 cfs Sept. 8, 1940.

Remarks.--Records good except those for period of ice effect, which are fair. No diversion above station; slight regulation at times during low-water periods by small dam upstream.

Cooperation.--Gage-height record collected in cooperation with U. S. Weather Bureau.

Revisions (water years).--WSP 1044: 1943. WSP 1218: Drainage area.

Rating tables, water year 1952-53, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 18)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
0.8	18	2.5	370	0.8	22	3.0	710
1.0	29	3.0	590	1.0	40	4.0	1,370
1.3	56	4.0	1,160	1.3	82	6.0	3,050
1.6	101	7.2	3,810	1.8	190	10.5	8,000
2.0	202			2.5	440		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	24	b35	560	1,780	432	614	728	480	142	53	51
2	24	23	*136	1,150	1,520	384	550	650	432	133	52	48
3	24	22	114	890	3,450	364	510	560	384	129	51	45
4	24	22	205	685	2,670	328	480	525	352	120	52	41
5	24	22	309	555	2,330	304	490	520	320	116	55	39
6	23	22	354	454	2,910	284	475	490	432	112	53	38
7	22	22	1,110	575	2,520	280	450	480	590	108	53	38
8	22	22	545	1,150	2,310	328	412	590	784	102	51	38
9	23	21	495	3,320	1,620	352	*368	555	614	98	50	37
10	23	21	1,080	1,650	1,250	352	344	530	530	96	48	*36
11	23	25	848	1,190	938	408	312	440	440	93	46	35
12	23	51	998	1,720	782	555	320	400	432	89	44	34
13	22	81	752	2,000	668	490	392	360	392	86	41	34
14	22	89	585	1,640	560	432	424	384	352	86	41	33
15	21	69	454	*1,210	530	432	384	360	312	84	40	32
16	21	43	366	1,850	890	746	392	360	284	79	40	32
17	21	34	298	3,810	2,920	950	520	328	262	77	39	31
18	21	30	254	*7,940	1,850	866	480	312	245	76	38	29
19	20	28	233	*5,320	1,240	902	470	878	230	72	38	29
20	21	27	213	4,770	992	964	540	812	233	71	38	29
21	20	27	213	3,060	806	1,070	575	*860	208	69	40	29
22	20	26	257	2,060	728	1,740	540	854	*195	68	38	28
23	*21	b24	254	1,600	626	1,820	530	860	185	66	39	30
24	25	b23	251	1,190	550	1,810	436	896	175	63	45	29
25	25	b22	196	1,290	490	1,640	400	782	168	63	45	28
26	23	b22	182	1,570	*470	1,220	400	770	160	62	120	28
27	22	b22	185	1,170	440	978	662	1,060	156	60	116	29
28	22	b23	160	1,050	480	914	758	878	158	59	82	34
29	22	b23	306	1,470	-	770	626	758	158	*58	87	60
30	22	b23	486	1,520	-	698	722	650	156	56	71	37
31	24	-	450	1,540	-	722	-	550	-	55	58	-
Total	694	933	12,324	59,959	38,320	23,535	14,576	19,180	9,829	2,648	1,664	1,061
Mean	22.4	31.1	398	1,934	1,369	759	486	619	328	85.4	53.7	35.4
Cfsm	0.213	0.296	3.79	18.4	13.0	7.23	4.63	5.90	3.12	0.813	0.511	0.337
In.	0.25	0.33	4.37	21.24	13.57	8.34	5.16	6.79	3.48	0.94	0.59	0.38
Ac-ft	1,380	1,850	24,440	118,900	76,010	46,680	28,910	38,040	19,500	5,250	3,300	2,100

Calendar year 1952: Max 3,310 Min 20 Mean 349 Cfsm 3.32 In. 45.29 Ac-ft 253,600
Water year 1952-53: Max 7,940 Min 20 Mean 506 Cfsm 4.82 In. 65.44 Ac-ft 366,400

Peak discharge (base, 2,600 cfs).--Jan. 9 (4 a.m.) 4,100 cfs (7.52 ft); Jan. 18 (4:30 to 5:30 p.m.) 9,560 cfs (11.80 ft); Feb. 3 (1 p.m.) 4,150 cfs (7.10 ft); Feb. 6 (4 a.m.) 3,210 cfs (6.16 ft); Feb. 17 (5 a.m.) 3,330 cfs (6.28 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

Calapooya River at Albany, Oreg.

Location.--Lat 44°37'15", long. 123°07'40", in NW¼ sec. 13 T. 11 S., R. 4 W., near right bank on upstream side of highway bridge, half a mile downstream from Oak Creek, 1½ miles southwest of Albany, and 3 miles upstream from mouth.

Drainage area.--372 sq mi.

Records available.--October 1940 to September 1953.

Gage.--Wire-weight gage read twice daily, oftener at high stages. Datum of gage is 180.37 ft above mean sea level, datum of 1929.

Average discharge.--13 years, 900 cfs.

Extremes.--Maximum discharge during year, about 15,400 cfs Jan. 19; maximum gage height, 22.66 ft Jan. 20, affected by backwater from Willamette River; minimum discharge observed, 4 cfs Oct. 7.
1940-53: Maximum discharge observed, 24,900 cfs Jan. 8, 1948; maximum gage height, 25.5 ft Jan. 2, 1943, from graph based on gage readings, affected by backwater from Willamette River; minimum discharge observed, that of Oct. 7, 1952.

Remarks.--Records good except those below 100 cfs, which are fair. A few small diversions above station for irrigation. Diurnal fluctuation caused by ponds at flour mills near Shedd.

Revisions.--WSP 1218: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from Willamette River Jan. 19-23, Feb. 5-10)

0.8	3	4.0	428
.9	5	5.0	700
1.1	12	10.0	2,600
1.3	22	14.0	4,900
1.7	47	17.0	8,000
2.0	74	18.0	9,900
2.5	131	20.0	17,100
3.0	203		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	22	29	752	2,410	694	1,160	1,090	847	198	60	77
2	27	31	24	1,180	2,650	634	942	1,140	704	155	73	70
3	18	29	46	1,780	*3,340	610	819	889	622	166	32	68
4	16	13	158	1,410	5,120	554	721	752	554	154	67	54
5	28	26	143	1,010	5,840	508	676	679	516	152	60	60
6	18	23	361	780	5,030	480	688	640	557	138	54	51
7	4	23	366	*697	4,440	450	652	643	685	138	55	30
8	16	22	1,110	1,240	4,450	426	613	704	1,120	130	53	*59
9	16	35	882	3,160	3,940	453	554	878	1,080	122	94	29
10	25	26	595	4,950	3,210	478	508	738	822	113	33	35
11	16	11	1,310	4,510	2,220	528	470	661	685	107	69	33
12	24	30	1,230	3,500	1,550	652	448	575	655	105	48	36
13	18	26	1,190	4,320	1,230	973	473	520	628	99	38	59
14	6	30	892	5,240	1,050	770	554	488	541	100	41	21
15	*16	67	667	4,220	1,070	691	536	490	*476	97	33	46
16	18	93	533	3,040	1,270	1,420	503	500	440	95	39	32
17	23	81	446	3,390	2,980	2,800	562	470	403	90	22	36
18	16	*70	376	5,920	5,270	*2,440	646	436	368	85	31	32
19	18	37	347	*13,100	5,010	1,940	583	601	332	83	32	29
20	20	44	307	*10,100	2,960	1,950	567	1,110	332	76	28	30
21	7	34	282	8,420	1,870	2,230	622	1,160	316	81	35	18
22	18	28	305	6,680	1,410	2,830	700	1,260	280	75	27	34
23	20	36	383	5,040	1,250	3,000	650	1,340	277	82	41	30
24	30	29	347	3,540	1,050	2,850	586	1,790	217	69	23	31
25	20	21	300	2,620	917	2,990	510	1,940	207	69	42	28
26	27	27	266	3,420	805	2,670	490	1,720	221	72	49	29
27	22	32	264	3,900	728	1,960	486	2,570	197	53	46	30
28	18	23	252	2,980	682	1,530	984	3,080	186	*73	117	30
29	29	20	235	2,050	-	1,480	924	2,010	208	59	126	35
30	23	32	531	2,060	-	1,270	914	1,270	203	60	97	50
31	23	-	962	2,000	-	1,510	-	1,030	-	59	84	-
Total	605	1,021	15,139	117,009	73,752	43,771	19,541	33,174	14,679	3,155	1,649	1,202
Mean	19.5	34.0	488	3,774	2,634	1,412	651	1,070	489	102	53.2	40.1
Cfsm	0.052	0.091	1.31	10.1	7.08	3.80	1.75	2.88	1.31	0.274	0.143	0.108
In.	0.06	0.10	1.51	11.70	7.37	4.38	1.95	3.32	1.47	0.32	0.16	0.12
Ac-ft	1,200	2,030	30,030	232,100	146,300	86,820	38,760	65,800	29,120	6,260	3,270	2,380

Calendar year 1952: Max 6,270 Min 4 Mean 598 Cfsm 1.61 In. 21.88 Ac-ft 434,000
Water year 1952-53: Max 13,100 Min 4 Mean 890 Cfsm 2.39 In. 32.46 Ac-ft 644,100

* Discharge measurement made on this day.

Willamette River at Albany, Oreg.

Location.--Lat 44°38'20", long. 123°06'20", in SW¼ sec. 6, T. 11 S., R. 3 W., on right bank at Albany, a quarter of a mile downstream from Calapooya River and at mile 120.0.

Drainage area.--4,840 sq mi, approximately.

Records available.--November 1878 to April 1882, 1883 to 1888 (fragmentary), January 1892 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 172.18 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Sept. 27, 1906, staff gage a quarter of a mile upstream at same datum. Sept. 27, 1906, to Nov. 14, 1934, staff gage 300 ft upstream at same datum.

Average discharge.--58 years (1895-1953), 14,010 cfs.

Extremes.--Maximum discharge during year, 174,000 cfs Jan. 20 (gage height, 28.03 ft); minimum, 2,960 cfs Nov. 11.

1878-82, 1892-1953: Maximum discharge, 266,000 cfs Jan. 14, 1881 (gage height, 32.8 ft); minimum, 1,840 cfs Sept. 1, 2, 1940.

Maximum stage known, 36.0 ft Dec. 4, 1861 (discharge, 340,000 cfs, from rating curve extended above 220,000 cfs). Flood of Feb. 4, 1890, reached a stage of 33.9 ft (discharge, 291,000 cfs).

Remarks.--Records good. Flow regulated at times by Cottage Grove, Fern Ridge and Dorena Reservoirs (see pp. 125,147,128). Albany power canal diverts water from South Santiam River into Willamette River above station; small diversions for irrigation.

Revisions (water years).--WSP 694: Drainage area. WSP 904: 1939. WSP 964: 1881, 1890, 1894, 1897, 1901, 1903, 1908, 1910, 1916, 1923, 1927, 1932(M). WSP 984: 1916. WSP 1248: 1895, 1902, 1907, 1915(M), 1917(M), 1918-19, 1934(M).

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second) (Shifting-control method used Jan. 1-17)

-1.7	2,880	13.0	51,200
-.8	3,950	19.0	84,400
0.0	5,210	25.0	136,000
2.0	9,260	28.0	173,000
7.0	25,400		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,030	3,180	3,040	12,100	38,100	14,600	18,800	18,900	19,700	8,230	4,420	4,770
2	4,050	3,180	*3,290	14,000	41,700	14,200	17,100	21,800	18,200	8,010	4,430	4,720
3	4,030	3,180	4,010	24,800	45,100	13,100	15,400	19,400	17,000	7,680	4,510	4,780
4	4,020	3,100	5,040	23,200	65,100	12,100	14,200	*16,400	15,900	7,650	4,670	4,690
5	4,030	3,080	5,210	18,700	*90,200	11,200	13,400	15,100	14,800	7,900	4,860	4,610
6	4,020	3,070	6,880	*15,400	84,900	10,700	13,200	15,500	15,100	7,760	4,910	4,580
7	3,960	3,030	7,900	14,200	84,700	10,300	13,200	16,500	17,000	7,740	4,830	4,560
8	3,950	3,030	16,600	18,100	86,800	10,000	12,800	17,300	24,000	7,650	4,640	4,700
9	3,980	3,000	18,900	33,800	80,000	10,300	12,100	18,100	28,900	7,480	4,580	*4,670
10	3,960	3,000	14,300	53,400	65,200	11,000	11,400	18,400	26,200	7,160	4,450	4,380
11	3,960	2,970	17,800	60,800	46,700	11,700	10,700	17,600	22,600	6,840	4,370	4,290
12	3,980	3,030	21,600	48,700	33,700	12,500	10,300	16,200	20,100	6,590	4,450	4,380
13	3,950	3,270	20,400	49,200	27,200	14,300	10,400	14,800	18,800	6,440	4,430	4,480
14	3,870	3,620	16,300	59,800	23,600	14,100	10,800	13,900	17,500	6,330	4,340	4,420
15	*3,900	3,910	12,700	57,800	21,500	13,300	10,900	13,800	*16,100	6,220	4,270	4,450
16	3,870	3,990	10,400	44,200	21,200	15,200	10,600	13,600	15,100	6,040	4,350	4,400
17	3,770	3,760	8,710	47,600	27,300	*20,100	10,600	13,000	14,300	5,830	4,420	4,320
18	3,650	*3,580	7,700	67,600	47,200	21,800	11,200	12,600	13,700	5,640	4,400	4,300
19	3,530	3,400	6,950	109,000	55,600	22,000	11,400	14,000	13,200	5,520	4,270	4,240
20	3,510	3,240	6,550	*164,000	42,300	24,500	11,600	21,500	12,600	5,400	4,260	4,200
21	3,460	3,110	6,310	129,000	31,400	30,300	12,100	27,400	11,900	5,300	4,370	4,160
22	3,470	3,080	6,570	106,000	25,200	34,300	13,200	27,700	11,200	5,160	4,350	4,480
23	3,440	3,030	7,630	80,700	22,100	39,700	14,600	26,900	10,800	5,010	4,240	4,480
24	3,480	3,030	8,010	60,700	19,600	41,000	15,500	27,500	10,300	4,850	4,270	4,480
25	3,520	2,990	7,260	49,800	17,600	39,800	14,600	30,100	9,890	4,770	4,370	4,380
26	3,420	3,000	6,690	47,800	15,900	40,100	13,100	27,900	9,580	4,720	4,560	4,380
27	3,330	3,030	6,220	49,200	14,700	33,300	13,300	28,400	9,310	4,690	5,160	4,300
28	3,270	3,020	6,030	44,300	14,400	27,000	17,600	32,200	8,620	*4,660	5,600	4,240
29	3,290	2,970	6,080	37,300	-	23,600	20,300	30,100	8,260	4,560	5,240	4,290
30	3,260	2,990	7,680	37,600	-	21,100	19,700	25,500	8,120	4,530	5,190	4,480
31	3,210	-	11,500	36,500	-	20,100	-	21,900	-	4,480	5,020	-
Total	115,170	95,870	294,260	‡1,615.3	‡1,189	637,300	404,100	634,000	458,780	190,840	142,230	133,610
Mean	3,715	3,196	9,492	52,110	42,460	20,560	13,470	20,450	15,290	6,156	4,588	4,454
Cfsm	0.768	0.660	1.96	10.8	8.77	4.25	2.78	4.23	3.16	1.27	0.948	0.920
In.	0.88	0.74	2.26	12.41	9.14	4.90	3.11	4.87	3.53	1.47	1.09	1.03
Ac-ft	228,400	190,200	583,700	‡3,204	‡2,358	‡1,264	801,500	‡1,258	910,000	378,500	282,100	265,000

Calendar year 1952: Max 79,400 Min 2,970 Mean 12,600 Cfsm 2.60 In. 35.43 Ac-ft 9,147,000
Water year 1952-53: Max 164,000 Min 2,970 Mean 16,190 Cfsm 3.35 In. 45.43 Ac-ft 11,720,000

Peak discharge (base, 59,000 cfs).--Jan. 11 (7:30 a.m.) 62,700 cfs (15.24 ft); Jan. 14 (10 p.m.) 61,800 cfs (15.07 ft); Jan. 20 (7 to 8 a.m.) 174,000 cfs (28.03 ft); Feb. 5 (5 p.m.) 94,400 cfs (20.35 ft).

* Discharge measurement made on this day.

‡ Expressed in thousands.

North Santiam River below Boulder Creek, near Detroit, Oreg.
(Formerly published as North Santiam River at Detroit)

Location.--Lat 44°42'25", long. 122°06'00", in SE¼NW¼ sec. 17, T. 10 S., R. 6 E., on right bank half a mile downstream from Boulder Creek and 3 miles southeast of Detroit. Prior to Oct. 1, 1952, at site 2¼ miles downstream.

Drainage area.--216 sq mi.

Records available.--January 1907 to October 1909, October 1928 to September 1953. Published as North Santiam River at Detroit prior to Oct. 1, 1952.

Gage.--Water-stage recorder. Datum of gage is 1,590.07 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Jan. 24, 1907, to Oct. 31, 1909, staff gage at site 1¾ miles downstream at different datum. Oct. 1, 1928, to June 30, 1932, staff gage at site 2½ miles downstream at different datum. July 1932 to Sept. 30, 1952, water-stage recorder at site 2¼ miles downstream at datum 114.39 ft lower.

Average discharge.--27 years (1907-9, 1928-53), 977 cfs.

Extremes.--Maximum discharge during year, 13,700 cfs Jan. 18 (gage height, 8.64 ft); minimum, 378 cfs Nov. 28 (gage height, 2.27 ft).
1907-9, 1928-53: Maximum discharge, 20,300 cfs Dec. 28, 1945 (gage height, 11.24 ft, site and datum then in use); minimum, 250 cfs Sept. 13, 1909 (gage height, 0.40 ft, site and datum then in use).

Remarks.--Records excellent. No diversion above station. Slight diurnal fluctuation caused by powerplant at Idanha. Records of water temperatures for the water year 1953 are given in WSP 1293.

Revisions.--WSP 814: Drainage area. WSP 1248: 1931.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 10-16)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
2.2	350	4.0	1,790	2.5	435	6.0	5,100
2.6	550	5.0	3,250	3.0	755	7.0	7,700
3.0	820	6.1	5,500	4.0	1,700	8.1	11,500
				5.0	3,100		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	445	440	440	610	2,980	830	966	1,410	1,590	1,040	608	538
2	445	425	475	1,020	2,820	800	934	1,300	1,560	*1,060	608	532
3	445	420	465	1,180	4,950	778	918	1,270	1,450	1,120	608	514
4	440	415	*544	1,030	4,150	808	918	1,410	1,380	1,100	602	514
5	440	415	508	916	3,690	748	934	1,800	1,360	1,110	643	508
6	435	410	490	876	4,370	734	942	2,000	1,550	1,140	678	508
7	430	405	624	876	4,170	734	*926	2,060	1,930	1,170	636	508
8	430	405	538	1,230	3,450	785	894	1,880	1,760	1,150	608	502
9	430	405	508	4,780	2,650	846	854	1,670	1,660	1,040	596	496
10	425	405	673	3,340	2,150	918	830	1,500	1,680	1,010	589	490
11	430	420	820	2,780	1,840	999	808	1,360	1,680	974	576	490
12	425	455	1,040	4,520	1,610	1,040	808	1,320	1,760	950	576	496
13	425	508	828	*4,090	1,450	990	808	1,320	1,680	942	570	490
14	420	490	708	*3,060	1,350	942	800	1,380	1,580	926	563	490
15	415	460	645	2,350	1,270	966	778	1,370	1,540	878	576	490
16	420	440	592	3,240	1,290	1,070	785	1,300	1,500	822	570	484
17	420	430	562	5,440	1,560	1,040	830	1,330	1,500	800	556	474
18	420	425	538	*11,200	1,330	1,040	870	1,560	1,500	770	556	468
19	415	420	526	7,490	1,220	1,010	942	*2,340	1,420	755	*556	468
20	415	420	514	*6,220	1,130	982	1,110	2,080	1,320	734	550	468
21	*420	410	508	4,430	1,060	966	1,310	1,930	1,230	706	550	462
22	425	400	526	3,270	1,030	1,050	1,480	1,720	1,230	699	550	462
23	425	395	502	2,980	974	1,120	1,660	1,630	1,210	685	550	462
24	435	395	485	2,460	*942	1,230	1,550	1,510	1,140	671	550	462
25	430	395	475	2,200	902	1,280	1,550	1,410	1,130	657	556	457
26	425	390	475	1,940	878	1,190	1,660	1,600	1,120	643	699	457
27	425	390	475	1,670	862	1,120	1,980	1,940	1,070	636	615	457
28	420	386	475	1,590	862	1,090	1,990	1,880	1,100	636	596	508
29	425	386	544	1,670	-	1,040	1,750	1,830	1,090	629	602	*484
30	430	390	666	1,900	-	1,040	1,590	1,750	1,060	622	556	484
31	435	-	624	2,350	-	1,010	-	1,630	-	615	544	-
Total	13,265	12,550	17,793	92,708	56,940	30,196	34,175	50,490	42,780	26,690	18,193	14,623
Mean	428	418	574	2,991	2,034	974	1,139	1,629	1,426	861	587	487
Cfsm	1.98	1.94	2.66	13.8	9.42	4.51	5.27	7.54	6.60	3.99	2.72	2.25
In.	2.28	2.16	3.06	15.96	9.80	5.20	5.88	8.69	7.37	4.60	3.13	2.52
Ac-ft	26,310	24,890	35,290	183,900	112,900	59,890	67,790	100,100	84,850	52,940	36,090	29,000

Calendar year 1952: Max 2,940 Min 386 Mean 931 Cfsm 4.31 In. 58.65 Ac-ft 675,800
Water year 1952-53: Max 11,200 Min 386 Mean 1,124 Cfsm 5.20 In. 70.65 Ac-ft 814,000

Peak discharge (base, 3,200 cfs).--Jan. 9 (7:30 a.m.) 5,780 cfs (6.21 ft); Jan. 12 (10 p.m.) 5,110 cfs (5.94 ft); Jan. 18 (3:30 p.m.) 13,700 cfs (8.64 ft); Feb. 3 (12 m.) 5,750 cfs (6.26 ft); Feb. 5 (12 p.m.) 4,650 cfs (5.80 ft).

* Discharge measurement made on this day.

Breitenbush River above Canyon Creek, near Detroit, Oreg.
(Formerly published as Breitenbush River above French Creek, near Detroit)

Location.--Lat 44°45'10", long. 122°07'40", in SE¼NE¼ sec. 36, T. 9 S., R. 5 E., on left bank 600 ft above mouth of Canyon Creek and 1½ miles (revised) northeast of Detroit. Prior to Oct. 1, 1952, at site 0.2 mile downstream.

Drainage area.--106 sq mi.

Records available.--June 1932 to September 1953. Prior to Oct. 1, 1952, published as "above French Creek, near Detroit".

Gage.--Water-stage recorder. Datum of gage is 1,573.10 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1952, water-stage recorder at site 0.2 mile downstream at datum 13.46 ft lower.

Average discharge.--21 years, 556 cfs.

Extremes.--Maximum discharge during year, 9,490 cfs Jan. 18 (gage height, 10.95 ft); minimum, 110 cfs Nov. 29, 30.
1932-53: Maximum discharge, 11,600 cfs Dec. 28, 1945 (gage height, 11.86 ft, site and datum then in use); minimum, 87 cfs Sept. 2, 1940 (gage height, 0.36 ft, site and datum then in use).

Remarks.--Records good. No diversion or regulation above station. Records of water temperatures for the water year 1953 are given in WSP 1293.

Revisions (water years).--WSP 1044: 1943(M). WSP 1248: 1947.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
2.5	110	5.0	1,330	2.6	132	5.0	1,370
3.0	208	6.0	2,300	3.0	225	6.0	2,300
3.5	360	8.0	4,690	3.5	390	8.0	4,690
4.0	600	10.1	8,020	4.0	640		
4.5	910						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	137	135	130	331	2,320	422	552	726	726	462	249	182
2	135	128	148	1,060	2,110	394	515	646	700	*510	252	175
3	133	126	148	1,040	3,600	370	505	629	629	546	255	170
4	131	126	*228	751	2,610	358	515	772	590	525	252	164
5	131	126	213	611	2,300	350	530	1,100	580	552	249	161
6	131	126	185	510	2,760	350	530	1,180	720	607	291	159
7	131	124	308	540	2,660	358	*500	1,070	994	602	243	157
8	131	124	259	1,210	2,140	448	462	900	830	596	230	154
9	131	123	201	3,930	1,540	541	435	778	752	510	220	152
10	131	124	485	*2,110	1,200	585	390	694	720	466	212	152
11	131	135	847	1,960	956	640	390	612	784	471	212	152
12	131	160	1,290	3,200	810	664	390	590	837	480	210	146
13	130	174	757	*3,050	700	585	394	607	784	476	205	144
14	128	164	510	1,990	640	530	390	646	732	480	198	142
15	128	140	388	1,380	585	552	386	618	732	422	190	142
16	128	133	338	2,800	629	739	408	574	688	386	190	142
17	128	128	291	5,270	970	670	444	612	688	362	188	142
18	128	128	261	*8,020	720	607	480	804	688	350	185	142
19	128	128	244	*4,480	590	585	558	*1,270	612	336	*185	140
20	128	126	223	3,750	536	574	752	994	525	312	185	136
21	*128	124	223	2,650	500	568	907	886	495	294	180	138
22	126	123	250	2,260	480	726	1,050	817	515	303	175	138
23	128	121	247	2,350	440	844	1,130	746	520	300	175	140
24	130	121	220	1,650	*422	986	935	682	476	282	188	136
25	126	120	199	1,460	408	994	907	624	495	279	188	136
26	126	118	190	1,270	404	810	1,030	720	495	279	291	134
27	126	118	183	986	412	720	1,290	942	471	273	255	134
28	124	116	185	935	440	694	1,180	900	495	267	225	161
29	126	113	253	1,160	-	640	935	886	480	270	240	*146
30	135	113	445	1,500	-	624	830	830	458	264	208	161
31	135	-	368	1,980	-	602	-	752	-	255	192	-
Total	4,020	3,865	10,197	66,174	33,882	18,530	19,720	24,607	19,211	12,517	6,718	4,478
Mean	130	129	329	2,135	1,210	598	657	794	640	404	217	149
Cfsm	1.23	1.22	3.10	20.1	11.4	5.64	6.20	7.49	6.04	3.81	2.05	1.41
In.	1.41	1.36	3.58	23.22	11.89	6.50	6.92	8.63	6.74	4.39	2.36	1.57
Ac-ft	7,970	7,670	20,230	131,300	67,200	36,750	39,110	48,810	38,100	24,830	13,320	8,880

Calendar year 1952: Max 2,450 Min 113 Mean 455 Cfsm 4.29 In. 58.49 Ac-ft 330,600
Water year 1952-53: Max 8,020 Min 113 Mean 613 Cfsm 5.78 In. 78.57 Ac-ft 444,200

Peak discharge (base, 4,000 cfs).--Jan. 9 (5 a.m.) 5,180 cfs (8.35 ft); Jan. 18 (1 p.m.) 9,490 cfs (10.95 ft); Feb. 3 (12 m.) 4,080 cfs (7.55 ft).
* Discharge measurement made on this day.

Detroit Reservoir near Detroit, Oreg.

Location.--Lat 44°43'20", long. 122°15'20", in NW¼ sec. 7, T. 10 S., R. 5 E., in control house near right abutment of Detroit Dam and 5 miles west of Detroit.

Drainage area.--437 sq mi.

Records available.--January to September 1953.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (levels by Corps of Engineers).

Extremes.--Maximum contents during year, 317,600 acre-ft June 28 (elevation, 1,525.15 ft); negligible storage prior to January.

Remarks.--Reservoir is formed by concrete, gravity-type dam with six 42-by 28-foot control gates. Length of dam is 1,580 ft; built by Corps of Engineers. Storage began in January 1953. Total capacity is 454,900 acre-ft and usable capacity is 340,200 acre-ft between elevation 1,425.0 ft (proposed lower limit of operation) and 1,569.0 ft (top of spillway gates). Reservoir used for flood control, power development, irrigation, improvement of navigation, pollution abatement, and other purposes. Capacity table computed by Corps of Engineers. Figures shown herein are for total storage.

Total contents at 12 p.m., in acre-feet, January to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				4,840	113,300	68,600	152,300	225,400	312,500	317,400	315,900	316,800
2				6,840	110,200	69,830	154,100	228,400	312,500	317,500	316,000	316,700
3				7,340	135,000	71,220	155,800	230,700	312,400	317,400	316,000	316,400
4				6,400	147,100	72,690	157,600	234,200	312,600	317,400	316,000	316,100
5				5,200	155,600	73,810	159,400	238,700	313,200	317,400	316,000	315,800
6				4,980	173,600	74,670	161,300	242,300	314,700	317,300	316,000	315,700
7				5,100	188,700	75,560	163,000	244,800	315,700	317,300	316,000	315,700
8				8,240	193,900	76,850	164,500	246,200	315,800	317,200	315,900	315,300
9				31,500	184,100	78,560	165,800	247,800	316,100	317,000	315,900	315,000
10				37,160	170,700	81,010	167,200	248,700	317,100	316,800	315,800	314,600
11				33,120	155,000	84,090	168,700	248,900	316,800	316,700	315,700	314,100
12				50,310	137,500	87,480	170,300	249,000	317,000	316,900	315,700	314,100
13				63,700	122,400	90,320	172,100	253,600	316,800	316,600	315,800	314,200
14				59,850	105,600	92,680	173,600	253,600	316,100	317,000	315,800	313,600
15				51,460	90,590	95,510	175,200	256,600	315,400	316,900	315,800	312,900
16				58,700	76,630	99,650	176,300	259,300	315,600	316,700	316,000	312,300
17				89,680	75,980	102,200	179,000	262,100	316,800	316,800	316,000	311,500
18				146,500	65,200	103,200	181,100	266,300	317,500	316,800	316,000	310,900
19				182,100	58,650	105,300	183,700	273,900	317,400	316,700	316,000	310,200
20				203,800	58,980	108,400	187,600	280,000	317,500	316,500	315,900	309,600
21				205,400	58,890	111,300	192,300	285,600	317,400	316,200	315,900	308,800
22				201,600	58,870	115,400	197,600	290,300	317,400	316,000	315,900	308,200
23				197,500	59,900	120,200	202,700	294,300	317,400	315,800	315,900	307,500
24				189,700	61,600	125,800	205,600	297,700	317,600	315,100	316,000	306,800
25				181,500	62,050	131,300	208,200	300,900	317,500	315,600	316,200	306,000
26				170,200	64,410	135,500	211,100	304,500	317,300	316,100	316,700	304,900
27				155,400	65,760	139,000	214,200	309,900	317,500	316,000	316,800	303,700
28				140,800	67,270	142,300	215,100	312,500	317,500	315,800	316,900	302,300
29				127,200	-	145,100	217,900	313,000	317,400	316,100	316,900	301,100
30				116,400	-	147,800	222,000	312,700	317,400	316,000	316,800	300,500
31				111,900	-	150,200	-	312,400	-	316,000	316,900	-

Monthly elevation and total contents, January to September 1953

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Dec. 31, 1952	-	-	0
Jan. 31, 1953	1,423.00	111,900	+111,900
Feb. 28	1,385.87	67,270	-44,630
Mar. 31	1,447.19	150,200	+82,930
Apr. 30	1,485.49	222,000	+71,800
May 31	1,523.15	312,400	+90,400
June 30	1,525.06	317,400	+5,000
July 31	1,524.54	316,000	-1,400
Aug. 31	1,524.88	316,900	+900
Sept.30	1,518.58	300,500	-16,400
The period	-	-	+500,500

† Elevation at 12 p.m.

Note.--Planned storage began in January 1953; prior to January only negligible storage which was chiefly just natural streamflow passing through reservoir or temporary storage caused by construction.

North Santiam River at Niagara, Oreg.
(Formerly published as North Santiam River above Mayflower Creek, near Detroit)

Location.--Lat 44°45'10", long. 122°17'50", in NE¼NE¼ sec. 34, T. 9 S., R. 4 E., on left bank 0.8 mile below Big Cliff Dam and 2.1 miles east of Niagara.

Drainage area.--453 sq mi.

Records available.--December 1908 to September 1912 (gage heights and discharge measurements only), October 1912 to December 1919, and October 1938 to September 1953. Prior to October 1912, published as North Fork Santiam River near Niagara, and October 1938 to September 1952, published as North Santiam River above Mayflower Creek, near Detroit.

Gage.--Water-stage recorder. Datum of gage is 1,093.78 ft above mean sea level (Bureau of Public Roads benchmark). Dec. 20, 1908, to Dec. 31, 1919, staff gage at site half a mile west of Niagara at different datum. Oct. 1, 1938, to Sept. 30, 1952, water-stage recorders or staff gages at various sites and datums about 3.5 miles upstream.

Average discharge.--22 years (1912-19, 1938-53), 2,250 cfs (adjusted).

Extremes.--Maximum discharge during year, 12,700 cfs Feb. 10 (gage height, 8.36 ft); minimum, 318 cfs Oct. 1; caused by construction operations at Detroit Dam; minimum daily, 518 cfs Nov. 29.

1912-19, 1938-53: Maximum discharge, 63,200 cfs Nov. 22, 1909 (gage height, 16.4 ft, from floodmark, site and datum then in use), from rating curve extended above 35,000 cfs; minimum, that of Oct. 1, 1952; minimum daily, 430 cfs Sept. 23-25, 1915 (gage height, 1.25 ft).

Revisions.--The figures of maximum discharge for the water years 1916 and 1920 have been revised to 27,000 cfs Dec. 22, 1915 (gage height, 11.0 ft, from graph based on gage readings) and 46,700 cfs Nov. 4, 1919 (gage height, 14.1 ft, from graph based on gage readings), superseding those published in WSP 444 and 514, respectively.

Remarks.--Records excellent. No diversion above station. Flow regulated by Detroit Reservoir beginning January 1953. Records of water temperatures for the water year 1953 are given in WSP 1293.

Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1914-19, superseding those published in WSP 444, 464, 484, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1914		1915-Con.		1916-Con.		1917-Con.		1917-Con.	
Apr. 16	6,000	May 22	2,700	June 3	3,200	June 14	6,400	Sept.19	740
17	5,000			4	3,500	15	7,100	20	740
18	4,500	1916		5	3,200	17	7,400	21	740
June 1	1,500	Feb. 10	9,000	6	3,100	18	7,000	Dec. 22	8,000
2	1,600	11	11,000	7	3,000	19	6,800	23	11,000
3	1,600	12	8,000	25	4,000	20	6,400	24	9,600
4	1,500	13	6,000	26	4,200	21	6,300	25	7,000
5	1,500	14	6,000	27	4,400	22	6,000	26	10,000
6	1,600	15	6,600	28	3,700	23	5,600	27	13,000
12	2,000	16	7,200	29	3,400	24	5,400	28	14,000
13	1,850	17	7,200	July 1	4,000	25	5,200	29	11,000
14	1,700	18	6,600	2	6,000	26	5,000	30	9,000
15	1,700	19	6,200	3	6,000	27	5,000	31	8,000
16	1,650	20	6,000	4	5,000	28	5,000		
17	1,600	Mar. 8	4,000	5	4,500	29	4,900	1919	
18	1,600	9	4,700	6	4,000	30	4,600	Nov. 19	2,800
19	1,450	10	5,000	7	3,600	Sept. 3	720	20	3,200
Dec. 1	1,900	11	5,400	8	3,300	4	720	21	2,500
2	1,800	12	5,400	11	3,000	5	720	22	2,200
3	2,100	13	5,200	12	2,800	6	720	25	2,000
4	1,800	14	4,500	13	2,700	7	800	26	1,800
5	1,500	15	4,300	14	2,700	8	800	27	1,700
8	1,400	16	4,000	15	2,600	9	840	28	2,000
9	1,250	17	3,900	16	3,000	10	840	29	5,000
10	1,200	18	4,200	17	4,000	11	920	Dec. 1	7,000
		19	5,000	18	3,500	12	840	2	5,000
1915		20	6,800	19	3,200	13	880	3	4,500
May 14	4,000	21	7,000			14	880	4	2,500
18	3,000	28	8,000	1917		15	880	5	2,300
19	4,000	29	6,000	June 11	7,000	16	820	6	2,200
20	3,300	30	5,200	12	6,400	17	780	13	1,250
21	3,000	31	4,700	13	6,000	18	740		

Month	Maximum	Minimum	Mean	Per square mile	Runoff	
					Inches	Acre-feet
April 1914	7,580	1,680	3,170	6.79	7.58	189,000
June	2,320	1,150	1,630	3.49	3.89	97,000
Water year 1914	8,300	580	2,180	4.67	63.43	1,580,000
December 1914	2,100	880	1,210	2.59	2.99	74,400
May 1915	4,000	1,250	2,450	5.25	6.05	151,000
Water year 1914-15	6,240	430	1,660	3.55	48.39	1,200,000
February 1916	19,500	1,450	6,080	13.0	14.02	350,000
March	11,800	2,740	5,350	11.5	13.26	329,000
June	5,800	3,000	3,950	8.46	9.44	235,000
July	6,000	1,800	3,180	6.81	7.85	196,000
Water year 1915-16	19,500	460	3,460	7.41	100.76	2,510,000
June 1917	8,060	4,600	6,100	13.1	14.62	363,000
September	970	720	809	1.73	1.93	48,100
Water year 1916-17	8,060	650	2,620	5.61	76.28	1,900,000
December 1917	34,200	2,740	9,570	20.5	23.63	588,000
Water year 1917-18	34,200	520	2,600	5.57	75.62	1,880,000
November 1919	33,000	1,700	5,440	11.6	12.94	324,000
December	10,900	1,250	4,100	8.78	10.12	252,000
Calendar year 1919	33,000	580	2,840	6.08	82.57	2,058,200

North Santiam River at Niagara, Oreg.--Continued

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

2.0	500	5.0	3,900
2.5	810	7.0	8,400
3.0	1,220	8.5	13,200
4.0	2,350		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	602	608	590	1,640	7,800	1,040	1,130	1,320	3,000	1,750	936	796
2	602	584	698	2,940	10,000	1,040	1,130	1,310	2,970	1,790	831	888
3	596	572	728	3,880	1,980	845	1,140	1,310	2,780	*1,980	936	904
4	600	560	960	3,640	3,150	754	1,150	1,340	2,540	1,860	944	912
5	600	554	*1,160	3,050	7,340	880	1,160	1,700	2,300	1,880	888	859
6	590	560	1,020	2,440	2,630	1,010	1,170	2,610	2,260	2,000	1,130	728
7	590	554	1,400	2,250	3,120	1,020	1,150	3,030	3,730	1,980	944	789
8	584	554	1,410	3,030	6,030	1,040	*1,140	3,080	3,750	2,040	904	888
9	584	548	1,120	4,120	11,600	1,070	1,140	2,590	3,210	1,880	880	912
10	584	554	1,860	*5,520	12,100	944	1,020	2,580	2,740	1,740	944	896
11	600	578	2,450	9,570	12,500	803	845	2,550	3,460	1,660	796	880
12	580	638	4,060	3,220	12,100	817	852	2,540	3,380	1,480	782	734
13	578	740	3,780	*3,580	11,700	810	873	1,680	3,350	1,700	754	620
14	578	796	2,820	*9,900	11,300	803	866	1,170	3,340	1,260	754	1,040
15	572	728	2,030	*10,400	10,800	824	859	1,120	3,320	1,500	754	1,020
16	572	662	1,600	6,020	11,000	912	838	1,070	2,680	1,410	710	1,030
17	566	608	1,430	1,840	5,610	1,400	866	1,070	2,090	1,340	761	1,010
18	580	590	1,260	2,310	9,090	2,090	873	1,140	2,270	1,080	740	1,000
19	580	578	1,180	1,670	6,120	1,320	896	*1,310	2,640	1,270	782	1,000
20	572	578	1,090	5,260	2,400	852	944	1,270	2,350	1,280	*831	1,000
21	572	578	1,070	10,300	2,350	852	960	1,220	2,150	1,230	747	1,000
22	*566	566	1,110	10,800	2,210	1,000	1,020	1,190	2,120	1,190	740	1,000
23	566	554	1,120	10,600	1,430	1,020	1,330	1,220	2,110	1,170	734	1,000
24	578	548	1,030	10,300	1,050	1,190	1,910	1,390	1,960	1,380	734	1,000
25	580	548	960	10,200	*1,050	1,280	2,120	1,390	1,980	789	768	1,010
26	570	542	904	11,100	1,050	1,200	2,140	1,430	2,000	710	1,030	1,180
27	566	536	873	11,900	1,040	1,170	3,380	1,540	1,760	1,020	960	1,230
28	566	530	845	11,700	1,050	1,160	4,280	2,510	1,910	*952	1,010	1,640
29	*560	518	1,070	11,600	-	1,140	2,430	3,700	1,930	896	928	1,180
30	566	524	1,800	11,900	-	1,150	1,330	3,760	1,840	912	866	1,220
31	578	-	1,880	11,000	-	1,150	-	3,380	-	838	782	-
Total	17,978	17,588	45,308	207,680	169,600	32,586	40,942	58,520	77,920	43,967	26,300	29,366
Mean	580	586	1,462	6,699	6,057	1,051	1,365	1,888	2,597	1,418	848	979
Ac-ft	35,660	34,890	89,870	411,900	336,400	64,630	81,210	116,100	154,600	87,210	52,170	58,250

Adjusted for change in contents in Detroit Reservoir

Mean	580	586	1,462	8,519	5,254	2,400	2,571	3,358	2,682	1,396	863	703
Cfsm	1.28	1.29	3.23	18.8	11.6	5.30	5.68	7.41	5.92	3.08	1.91	1.55
In.	1.48	1.44	3.72	21.68	12.08	6.11	6.33	8.55	6.61	3.55	2.20	1.73
Ac-ft	35,660	34,890	89,870	523,800	291,800	147,600	153,000	206,500	159,600	85,810	53,070	41,850
(†)	589	588	1,371	7,878	5,139	2,314	2,477	3,220	2,573	1,364	834	673

Observed

Calendar year 1952:	Max	11,300	Min	515	Mean	1,893	Ac-ft	1,374,000
Water year 1952-53:	Max	12,500	Min	518	Mean	2,103	Ac-ft	1,523,000

Adjusted

Calendar year 1952:	Mean	1,893	Cfsm	4.18	In.	58.61	Ac-ft	1,374,000
Water year 1952-53:	Mean	2,519	Cfsm	5.56	In.	75.48	Ac-ft	1,824,000

* Discharge measurement made on this day.

† Adjusted mean discharge for station above Mayflower Creek near Detroit (discontinued Sept. 30, 1953), which has been replaced by station at Niagara.

Little North Santiam River near Mehama, Oreg.

Location.--Lat 44°47'30", long. 122°34'40", in NW¼ sec. 16, T. 9 S., R. 2 E., on left bank 2 miles east of Mehama and 2 miles upstream from mouth.

Drainage area.--110 sq mi.

Records available.--October 1931 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 655.41 ft above mean sea level, datum of 1929. Oct. 1-26, 1931, staff gage at site 4 miles upstream at different datum. Oct. 27, 1931, to June 10, 1948, wire-weight gage at about present site at same datum.

Average discharge.--22 years, 759 cfs.

Extremes.--Maximum discharge during year, 14,600 cfs Jan. 18 (gage height, 12.61 ft); minimum, 24 cfs Oct. 14-23, Nov. 8, 9.
1931-53: Maximum discharge, 19,900 cfs Dec. 28, 1945 (gage height, 15.20 ft), from rating curve extended above 9,700 cfs by logarithmic plotting; minimum, 21 cfs Sept. 11, 1934, Sept. 27, 28, 1938, Sept. 1, 1940.

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation or diversion above station.

Revisions (water years).--WSP 754: 1932. WSP 1218: 1934, 1936, 1949-50.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 16 to Mar. 20)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
2.3	24	4.5	590	2.5	36	5.5	1,320
2.5	33	5.0	900	2.9	77	6.5	2,500
2.8	64	6.0	1,800	3.3	145	8.0	5,130
3.1	112	7.0	3,000	3.9	325	10.0	9,080
3.5	204	9.0	6,300	4.5	620	12.0	13,300
4.0	365	10.5	9,300				

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	50	39	a800	4,070	495	835	1,060	800	*262	64	102
2	27	38	79	a2,200	2,880	445	740	975	740	249	63	91
3	26	30	116	a2,400	7,100	401	698	884	662	249	62	80
4	26	28	*221	a1,500	3,980	370	692	989	596	228	64	75
5	26	27	389	a1,100	3,750	349	722	1,220	578	213	65	70
6	26	26	272	a900	4,960	329	*698	1,220	877	213	71	66
7	26	26	723	a1,100	4,580	333	626	1,090	2,200	201	77	64
8	25	25	585	a3,000	3,470	475	550	1,020	1,860	190	65	63
9	26	24	373	a8,000	2,120	608	490	905	1,300	172	62	61
10	26	26	2,140	a4,000	1,550	650	445	800	1,110	158	57	57
11	26	34	2,820	a2,500	1,240	776	430	704	975	145	54	54
12	26	64	3,490	a5,000	1,030	821	465	644	912	137	52	52
13	25	120	1,780	a4,500	877	716	515	650	788	131	49	50
14	24	114	1,120	a3,500	807	590	535	692	704	127	47	47
15	24	112	817	*2,030	752	638	545	674	626	121	46	45
16	24	72	645	5,950	1,230	1,050	555	578	578	114	47	44
17	24	59	520	9,270	3,880	982	752	535	540	105	45	43
18	24	51	433	*12,000	1,770	835	770	*883	510	101	*44	42
19	24	45	381	6,720	1,290	800	898	1,810	500	96	43	42
20	*24	43	334	*5,450	1,020	877	1,170	1,560	525	93	43	40
21	24	40	351	3,710	835	1,000	1,240	1,310	450	88	45	38
22	24	38	515	3,180	722	2,400	1,200	1,200	401	85	43	38
23	25	34	476	3,790	*644	2,560	1,260	1,070	365	81	43	39
24	31	33	377	2,200	572	2,440	1,040	1,100	341	78	52	38
25	30	32	323	2,230	520	2,120	982	954	322	77	69	*37
26	27	31	288	2,060	485	1,490	1,060	905	304	76	176	36
27	25	30	269	1,600	480	1,190	1,570	1,500	290	73	272	38
28	25	30	262	1,560	525	1,090	1,560	1,270	286	71	198	61
29	*25	30	a700	2,350	-	954	1,150	1,120	283	69	195	80
30	29	32	a1,300	3,370	-	933	1,110	1,050	286	66	148	65
31	44	-	a1,000	4,090	-	989	-	919	-	65	118	-
Total	815	1,344	23,138	112,060	57,139	29,706	25,303	31,091	20,709	4,134	2,479	1,658
Mean	26.3	44.8	746	3,615	2,040	958	843	1,003	690	133	80.0	55.3
Cfsm	0.239	0.407	6.78	32.9	18.6	8.71	7.66	9.12	6.27	1.21	0.727	0.503
In.	0.28	0.45	7.82	37.89	19.32	10.04	8.55	10.51	7.00	1.40	0.84	0.56
Ac-ft	1,620	2,670	45,890	222,300	113,300	58,920	50,190	61,670	41,080	8,200	4,920	3,290

Calendar year 1952: Max 4,970 Min 24 Mean 553 Cfsm 5.03 In. 68.37 Ac-ft 401,200
Water year 1952-53: Max 12,000 Min 24 Mean 848 Cfsm 7.71 In. 104.66 Ac-ft 614,000

Peak discharge (base, 8,200 cfs).--Jan. 9 (time and discharge unknown); Jan. 18 (1 a.m.) 14,600 cfs (12.61 ft); Feb. 3 (11:30 a.m.) 9,080 cfs (10.00 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for Breitenbush River above Canyon Creek near Detroit and Molalla River near Wilhoit.

North Santiam River at Mehama, Oreg.

Location.--Lat 44°47'20", long. 122°37'00", in NW¼ sec. 18, T. 9 S., R. 2 E., on right bank 300 ft downstream from highway bridge and 0.5 mile downstream from Little North Santiam River.

Drainage area.--665 sq mi.

Records available.--July 1905 to March 1907, October 1910 to September 1914, September 1921 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 601.78 ft above mean sea level, datum of 1929. Prior to June 15, 1933, staff gage at site 100 ft upstream at same datum.

Average discharge.--37 years (1905-6, 1910-14, 1921-53), 3,253 cfs.

Extremes.--Maximum discharge during year, 23,800 cfs Jan. 18 (gage height, 8.97 ft); minimum, 472 cfs Oct. 10; minimum daily, 626 cfs Oct. 28, Nov. 9.
1905-7, 1910-14, 1921-53: Maximum discharge, 76,600 cfs Dec. 28, 1945 (gage height, 15.37 ft), from rating curve extended above 36,000 cfs on basis of slope-area determination of peak flow; maximum gage height, 17.5 ft Nov. 20, 1921, from graph based on gage readings, and Jan. 6, 1923, from floodmark, at site then in use; minimum discharge, 400 cfs Sept. 29, Oct. 13, 1934; minimum daily, 420 cfs Sept. 18, 1924.

Remarks.--Records excellent. Flow regulated by Detroit Reservoir beginning January 1953. No diversion above station for irrigation.

Revisions (water years).--WSP 634: Drainage area. WSP 739: 1922-23(M). WSP 1044: 1943. WSP 1248: 1906, 1911-14, 1924(M), 1926, 1934-36(M), 1937, 1938(M), 1942(M).

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.6	570	5.0	6,200
2.0	900	7.0	13,200
3.0	2,070	8.5	21,000
4.0	3,800		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	658	698	666	2,660	12,400	1,930	2,400	2,710	4,240	*2,180	1,070	990
2	690	690	819	5,880	14,800	1,860	2,250	2,610	4,020	2,140	972	1,020
3	690	658	945	6,710	12,200	1,680	2,200	2,480	3,780	2,320	1,080	1,060
4	682	650	1,200	5,620	9,050	1,480	2,170	2,580	3,330	2,200	1,090	1,070
5	682	642	*1,740	4,540	12,300	1,500	2,200	2,960	3,160	2,180	1,090	1,050
6	674	634	1,470	3,610	10,700	1,660	*2,200	4,090	3,350	2,290	1,240	900
7	666	634	2,270	3,260	9,680	1,670	2,180	4,220	6,430	2,290	1,140	900
8	666	634	2,270	4,750	9,640	1,810	2,030	4,640	6,330	2,280	1,060	972
9	666	626	1,700	14,100	14,600	2,000	1,930	3,780	5,190	2,200	1,040	1,000
10	650	634	4,250	8,800	14,200	1,970	1,810	3,610	4,110	2,010	1,090	1,000
11	674	658	5,400	13,800	14,100	1,940	1,560	3,490	4,900	1,930	981	1,000
12	666	730	8,460	10,700	13,500	2,110	1,620	3,410	4,590	1,760	900	936
13	658	900	6,100	9,500	12,800	2,000	1,670	2,830	4,470	1,900	900	714
14	650	981	4,380	14,500	12,400	1,830	1,680	2,140	4,290	1,560	891	990
15	650	927	3,140	*13,500	11,900	1,970	1,650	2,080	4,200	1,750	891	1,100
16	642	786	2,470	15,900	12,500	2,780	1,670	1,920	3,590	1,670	864	1,100
17	642	730	2,140	14,700	12,600	2,940	1,880	1,880	2,810	1,570	900	1,090
18	650	698	1,890	20,700	11,700	3,630	1,900	*2,070	2,880	1,290	*855	1,080
19	650	674	1,720	12,400	10,100	3,070	2,040	3,700	3,330	1,480	900	1,090
20	*650	674	1,590	12,700	4,260	2,580	2,350	3,450	3,090	1,510	945	1,090
21	642	666	1,560	16,400	3,870	2,640	2,470	3,160	2,740	1,450	900	1,080
22	642	658	1,800	15,400	3,610	4,710	2,500	2,920	2,640	1,390	864	1,090
23	642	650	1,790	16,000	*2,780	4,850	2,810	2,760	2,630	1,370	855	1,090
24	658	642	1,600	13,600	2,140	4,780	3,090	3,010	2,380	1,510	882	1,090
25	650	642	1,450	13,600	2,000	4,640	3,330	2,800	2,440	1,090	936	1,090
26	642	634	1,350	14,100	1,970	3,590	3,470	2,740	2,400	900	1,180	1,220
27	634	634	1,310	14,300	1,940	3,050	4,880	3,930	2,210	1,200	1,390	1,310
28	626	634	1,280	13,900	1,990	2,880	6,520	4,130	2,320	990	1,300	*1,630
29	634	634	1,830	14,600	-	2,600	4,380	5,390	2,320	1,180	1,310	1,370
30	650	634	3,370	15,700	-	2,600	2,810	5,420	2,310	1,050	1,180	1,310
31	666	-	3,070	16,800	-	2,600	-	4,810	-	1,090	1,040	-
Total	20,342	20,686	75,030	362,730	255,730	81,350	75,650	101,720	106,480	51,730	31,736	32,432
Mean	656	690	2,420	11,700	9,133	2,624	2,522	3,281	3,549	1,669	1,024	1,081
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	40,350	41,030	148,800	719,500	507,200	161,400	150,000	201,800	211,200	102,600	62,950	64,330

Calendar year 1952: Max 18,400 Min 626 Mean 2,729 Cfsm 4.10 In. 55.86 Ac-ft 1,981,000
Water year 1952-53: Max 20,700 Min 626 Mean 3,330 Cfsm 5.01 In. 67.98 Ac-ft 2,411,000

* Discharge measurement made on this day.

South Santiam River below Cascadia, Oreg.

Location.--Lat 44°23'30", long. 122°30'35", in SE¼ sec. 36, T. 13 S., R. 2 E., on right bank 100 ft downstream from bridge at Cascadia ranger station, half a mile downstream from Tollgate Creek, half a mile upstream from Deer Creek, and 1½ miles southwest of Cascadia. All records computed are for site at gaging cable 0.7 mile upstream, above Tollgate Creek.

Drainage area.--174 sq mi at gaging cable.

Records available.--September 1935 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 759.38 ft above mean sea level, datum of 1929. Prior to Nov. 1, 1935, staff gage at same site and datum.

Average discharge.--18 years, 780 cfs.

Extremes.--Maximum discharge during year, 17,500 cfs Jan. 18 (gage height, 14.94 ft), from rating curve extended above 10,000 cfs by logarithmic plotting; minimum, 37 cfs Nov. 9, 10, but may have been lower during periods of ice effect or no gage-height record.

1935-53: Maximum discharge, 23,400 cfs Dec. 28, 1945 (gage height, 18.65 ft), from rating curve extended above 12,000 cfs by logarithmic plotting; minimum, 23 cfs Dec. 1, 2, 1936 (gage height, 0.98 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No diversion or regulation above station.

Cooperation.--Water-stage recorder inspected by employee of U. S. Forest Service.

Rating tables, water year 1952-53, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
1.3	36	4.0	970	1.4	53	4.0	1,060
1.6	76	6.0	2,470	1.6	80	6.0	2,670
2.0	150	8.0	4,570	2.0	165	8.0	5,010
2.5	280	10.0	7,320	2.5	315	10.0	8,100
3.0	460			3.0	515	14.0	15,600

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a52	54	*92	625	3,760	640	940	1,370	1,040	390	100	104
2	a52	49	172	1,860	4,040	590	826	1,220	958	382	96	98
3	a50	46	159	1,450	8,910	538	776	1,100	844	382	94	91
4	a50	43	345	1,080	5,090	506	760	1,130	770	370	96	84
5	a54	42	404	946	5,520	479	770	1,300	760	346	102	82
6	a50	41	331	720	7,650	466	776	1,360	1,080	346	118	79
7	a46	40	1,170	904	5,450	470	738	1,350	1,860	336	110	77
8	a48	40	595	1,720	4,340	560	675	1,410	1,850	318	98	77
9	a44	37	396	6,620	2,670	650	620	1,320	1,470	290	91	76
10	a46	40	1,240	3,060	1,890	705	*585	1,190	1,300	271	87	74
11	a46	51	1,170	2,400	1,420	770	560	1,040	1,190	253	85	*69
12	a46	76	1,640	3,480	1,140	916	615	940	1,180	235	80	67
13	a44	152	1,120	3,500	982	820	787	886	1,090	220	77	66
14	a42	165	808	*2,560	880	743	826	940	988	220	76	65
15	a40	112	645	1,880	792	765	765	934	904	202	76	65
16	a38	75	516	3,570	940	1,130	814	850	832	182	77	63
17	a40	63	444	7,230	3,140	1,160	976	798	798	175	76	63
18	a40	58	376	15,600	2,030	1,070	946	1,040	754	165	74	62
19	a40	55	331	8,030	1,390	1,130	982	2,040	705	165	73	62
20	a42	54	314	6,880	1,110	1,220	1,180	1,960	650	150	74	61
21	a42	52	320	4,470	940	1,160	1,320	1,880	575	145	77	60
22	a42	48	428	3,160	850	2,550	1,390	*1,690	*551	136	74	60
23	41	46	376	2,700	748	2,570	1,430	1,670	520	129	76	61
24	*48	44	314	2,000	690	2,510	1,190	1,770	484	127	82	61
25	46	b42	280	1,870	640	2,380	1,130	1,470	466	122	85	60
26	43	b40	253	1,840	620	1,710	1,190	1,480	446	116	241	58
27	42	b40	250	1,470	*630	1,340	1,740	2,100	418	112	217	57
28	41	b40	233	1,480	695	1,200	1,900	1,810	434	108	155	93
29	41	b40	370	2,230	-	1,060	1,570	1,530	430	104	170	91
30	46	b42	750	2,920	-	1,050	1,490	1,360	426	*102	138	104
31	48	-	605	3,360	-	1,070	-	1,180	-	100	118	-
Total	1,390	1,727	16,447	101,615	68,957	33,928	30,267	42,118	25,773	6,699	3,193	2,190
Mean	44.8	57.6	531	3,278	2,463	1,094	1,009	1,359	859	216	103	73.0
Cfsm	0.257	0.331	3.05	18.8	14.2	6.29	5.80	7.81	4.94	1.24	0.592	0.420
In.	0.30	0.37	3.52	21.72	14.74	7.25	6.47	9.00	5.51	1.43	0.68	0.47
Ac-ft	2,760	3,430	32,620	201,600	136,800	67,300	60,030	83,540	51,120	13,290	6,330	4,340

Calendar year 1952: Max 5,800 Min 37 Mean 623 Cfsm 3.58 In. 48.76 Ac-ft 452,500
Water year 1952-53: Max 15,600 Min 37 Mean 916 Cfsm 5.26 In. 71.46 Ac-ft 663,200

Peak discharge (base, 5,300 cfs).--Jan. 9 (7:30 a.m.) 9,150 cfs (11.18 ft); Jan. 18 (3 p.m.) 17,500 cfs (14.94 ft); Feb. 3 (11:30 a.m.) 11,300 cfs (11.72 ft); Feb. 5 (12 p.m.) 11,600 cfs (11.90 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for station at Waterloo and Middle Santiam River at mouth near Foster.

b Stage-discharge relation affected by ice.

Middle Santiam River at mouth, near Foster, Oreg.

Location.--Lat 44°25'25", long. 122°37'20", in NE¼SE¼ sec. 24, T. 13 S., R. 1 E., on right bank half a mile upstream from mouth and 2½ miles northeast of Foster.

Drainage area.--287 sq mi.

Records available.--January 1951 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 562.14 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark). Prior to Oct. 24, 1952, staff gage at same site and datum.

Extremes.--Maximum discharge during year, 36,400 cfs Jan. 18 (gage height, 19.23 ft); minimum, 75 cfs Nov. 28 (gage height, 0.80 ft).
1951-53: Maximum discharge, that of Jan. 18, 1953; minimum, 72 cfs Sept. 22-24, 1951 (gage height, 0.77 ft).
During flood of Dec. 28, 1945, flow of 41,800 cfs occurred at former station upstream where drainage area is 6 percent smaller.

Remarks.--Records excellent. No regulation or diversions above station. Records of water temperatures for the water year 1953 are given in WSP 1293

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 3-28; backwater from ice Nov. 26-30)

0.8	75	7.0	2,520
2.0	219	10.0	6,690
3.0	373	13.0	13,300
4.0	600	17.0	26,600
5.0	960	19.0	35,400
6.0	1,560		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	93	123	150	1,470	7,940	1,250	1,790	2,610	1,770	600	230	230
2	93	115	*351	4,460	6,980	1,140	1,590	2,430	1,630	576	226	211
3	91	98	358	3,870	16,500	1,060	1,500	2,130	1,460	570	222	193
4	90	93	638	2,740	10,100	982	1,520	2,210	1,340	545	222	184
5	89	88	964	2,130	10,400	928	1,570	2,510	1,300	522	227	174
6	87	86	579	1,740	13,000	888	1,560	2,560	1,720	515	241	170
7	85	84	1,770	1,750	10,500	900	1,420	2,460	2,770	498	244	165
8	84	82	1,340	2,810	7,760	1,080	1,280	2,560	3,000	475	220	162
9	84	81	812	*12,500	5,000	1,260	1,160	2,530	2,380	442	211	158
10	85	82	3,040	5,400	3,680	1,360	*1,080	2,360	2,160	416	204	*153
11	85	104	4,520	4,250	2,860	1,570	1,040	2,010	1,900	398	197	150
12	84	166	5,410	7,030	2,320	1,800	1,110	1,820	1,860	383	192	148
13	83	268	3,210	7,870	1,950	1,570	1,310	1,750	1,790	370	189	141
14	82	334	2,180	*6,030	1,760	1,350	1,400	1,730	1,590	361	186	138
15	81	308	1,690	4,340	1,630	1,500	1,300	1,660	1,430	353	188	136
16	79	189	1,360	11,400	2,240	2,600	1,390	1,480	1,320	336	183	133
17	79	152	1,140	21,500	6,500	2,300	1,810	1,360	1,240	324	179	129
18	78	132	964	*31,800	4,280	2,010	1,800	1,740	1,180	316	175	127
19	78	124	872	18,300	3,020	2,040	1,910	4,060	1,120	307	171	126
20	77	120	782	*14,300	2,400	2,160	2,360	3,290	1,070	300	171	124
21	77	117	768	9,330	2,010	2,240	2,630	*3,200	960	292	176	122
22	77	109	1,020	6,590	1,820	4,340	2,650	3,070	900	286	167	122
23	77	104	920	6,090	1,610	4,630	2,650	2,830	*852	277	169	123
24	*99	98	765	4,440	1,440	4,620	2,180	2,770	790	274	184	122
25	95	89	651	4,300	1,320	4,310	2,070	2,410	737	265	208	118
26	88	85	585	4,040	1,250	3,170	2,200	2,420	706	258	504	115
27	85	85	545	3,150	*1,230	2,590	3,230	3,690	667	253	515	115
28	82	85	508	3,170	1,350	2,400	3,440	3,200	674	246	356	174
29	84	90	1,140	4,880	-	2,140	2,770	2,690	660	243	371	206
30	89	100	2,240	6,210	-	2,050	2,750	2,310	654	*239	302	173
31	100	-	1,660	7,470	-	2,090	-	1,990	-	233	254	-
Total	2,640	3,791	42,932	225,360	132,850	64,328	56,470	75,840	41,630	11,473	7,284	4,542
Mean	85.2	126	1,385	7,270	4,745	2,075	1,882	2,446	1,388	370	235	151
Cfsm	0.297	0.439	4.83	25.3	16.5	7.23	6.56	8.52	4.84	1.29	0.819	0.526
In.	0.34	0.49	5.56	29.20	17.21	8.34	7.32	9.83	5.39	1.49	0.94	0.59
Ac-ft	5,240	7,520	85,150	447,000	263,500	127,600	112,000	150,400	82,570	22,760	14,450	9,010

Calendar year 1952: Max 12,300 Min 77 Mean 1,213 Cfsm 4.23 In. 57.52 Ac-ft 880,800
Water year 1952-53: Max 31,800 Min 77 Mean 1,833 Cfsm 6.39 In. 86.70 Ac-ft 1,327,000

Peak discharge (base, 12,000 cfs).--Jan. 9 (6:30 a.m.) 19,000 cfs (14.95 ft); Jan. 18 (3:30 p.m.) 36,400 cfs (19.23 ft); Feb. 3 (10 a.m. to 12 m.) 19,500 cfs (15.09 ft); Feb. 5 (11 p.m.) 18,000 cfs (14.65 ft).
* Discharge measurement made on this day.

Wiley Creek near Foster, Oreg.

Location.--Lat 44°22'20", long. 122°37'20", in NE¼ sec. 12, T. 14 S., R. 1 E., on right bank 0.4 mile downstream from Little Wiley Creek and 3½ miles southeast of Foster.

Drainage area.--52 sq mi, approximately.

Records available.--October 1947 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 718.08 ft above mean sea level (Corps of Engineers benchmark).

Average discharge.--6 years, 238 cfs.

Extremes.--Maximum discharge during year, 4,320 cfs Jan. 18 (gage height, 6.74 ft); maximum gage height, 7.80 ft Jan. 18 (backwater from debris); minimum discharge, 5.6 cfs about Nov. 26 (gage height, 0.73 ft), from recorded range in stage.
1947-53: Maximum discharge, 5,410 cfs Jan. 7, 1948 (gage height, 7.52 ft); maximum gage height, that of Jan. 18, 1953; minimum discharge, that of Nov. 26, 1952.

Remarks.--Records good except those for period of no gage-height record, which are fair. No diversion or regulation above station.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.7	5.6	2.0	230
.8	10	3.0	680
1.0	23	4.0	1,350
1.2	44	5.0	2,240
1.5	92	6.1	3,490

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	12	a20	254	700	171	262	359	220	e8	24	23
2	10	11	*88	503	690	155	230	301	195	61	23	22
3	9.4	11	72	418	1,500	147	212	258	171	57	23	20
4	8.9	10	154	314	1,060	134	206	237	155	52	24	19
5	8.9	9.4	177	251	1,030	126	209	230	152	51	25	18
6	8.9	8.9	174	209	1,170	124	212	212	216	48	26	18
7	8.9	8.9	610	289	1,010	124	202	226	350	45	25	18
8	8.4	8.9	320	540	984	142	183	281	354	44	22	18
9	8.9	8.4	198	2,190	670	155	*165	251	297	43	22	18
10	9.4	8.9	511	802	498	171	155	220	251	40	21	17
11	9.4	13	440	615	390	212	147	195	216	39	20	*17
12	9.4	24	503	754	314	293	165	177	198	38	19	17
13	9.4	51	382	868	265	258	202	160	180	38	18	17
14	9.4	58	285	*730	240	223	206	189	157	38	17	16
15	9.4	39	220	560	220	251	189	195	142	37	18	16
16	8.9	23	180	778	314	472	212	192	126	36	18	15
17	8.9	18	147	1,440	1,050	454	269	177	114	34	17	15
18	8.9	17	124	*3,390	690	404	262	216	105	32	17	15
19	8.9	15	114	2,210	480	413	262	462	105	32	17	15
20	9.4	14	105	*1,900	377	449	285	480	101	30	19	14
21	9.4	13	107	1,160	314	444	289	485	90	29	19	14
22	9.4	12	134	796	277	766	289	*444	*83	28	17	14
23	*10	11	119	610	240	748	265	476	79	28	19	15
24	14	a10	103	485	209	748	223	503	76	28	22	15
25	12	a9	90	545	189	710	206	413	72	28	22	14
26	11	a9	85	645	180	535	223	390	69	27	69	14
27	10	a9	88	472	*174	422	404	545	68	26	51	14
28	9.4	a10	83	454	186	382	436	449	74	26	36	35
29	10	a10	156	600	-	318	382	368	76	*25	40	26
30	11	a10	285	630	-	310	395	301	76	25	28	36
31	12	-	230	680	-	297	-	254	-	24	25	-
Total	301.9	472.4	6,302	26,092	15,421	10,558	7,347	9,646	4,568	1,157	763	545
Mean	9.74	15.7	203	842	551	341	245	311	152	37.3	24.6	18.2
Cfsm	0.187	0.302	3.90	16.2	10.6	6.56	4.71	5.98	2.92	0.717	0.473	0.350
In.	0.22	0.34	4.51	18.7	11.0	7.55	5.25	6.90	3.27	0.83	0.55	0.39
Ac-ft	599	937	12,500	51,750	30,590	20,940	14,570	19,130	9,060	2,290	1,510	1,080

Calendar year 1952: Max 1,570 Min 8.4 Mean 161 Cfsm 3.10 In. 42.22 Ac-ft 117,100
Water year 1952-53: Max 3,390 Min 8.4 Mean 228 Cfsm 4.38 In. 59.51 Ac-ft 165,000

Peak discharge (base, 1,400 cfs).--Jan. 9 (4 a.m.) 3,200 cfs (5.87 ft); Jan. 18 (2 p.m.) 4,320 cfs (6.74 ft); Feb. 3 (12 m.) 1,990 cfs (4.74 ft); Feb. 5 (10:30 p.m.) 1,530 cfs (4.23 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of weather records and records for Calapooya River at Holley.

South Santiam River at Waterloo, Oreg.

Location.--Lat 44°29'55", long. 122°49'20", in NW¼ sec. 28, T. 12 S., R. 1 W., on left bank 600 ft downstream from bridge at Waterloo and 2 miles upstream from Hamilton Creek.

Drainage area.--640 sq mi, approximately.

Records available.--July 1905 to March 1907, October 1910 to December 1911, July 1923 to September 1953. January to December 1911, gage heights only.

Gage.--Water-stage recorder. Datum of gage is 370.39 ft above mean sea level, datum of 1929. Prior to Dec. 31, 1911, staff gage at site half a mile downstream at datum about 5.0 ft lower. July 1, 1923, to Nov. 12, 1934, staff gage at present site and datum.

Average discharge.--31 years (1905-6, 1923-53), 2,779 cfs.

Extremes.--Maximum discharge during year, 57,700 cfs Jan. 18 (gage height, 19.43 ft); minimum, 125 cfs Nov. 28, 29 (gage height, 1.88 ft).
1905-7, 1910-11, 1923-53: Maximum discharge, 74,200 cfs Dec. 28, 1945 (gage height, 22.85 ft), from rating curve extended above 37,000 cfs; minimum, 96 cfs Sept. 1, 2, 1940.

Remarks.--Records good. No diversion or regulation above station. Some diurnal fluctuation caused by numerous log ponds above station.

Cooperation.--Gage-height record collected in cooperation with U. S. Weather Bureau.

Revisions (water years).--WSP 1248: 1907, 1924-30, 1932.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
1.9	130	4.0	1,920	2.1	175	6.0	5,690
2.2	230	5.0	3,700	2.5	345	7.5	9,850
2.5	370	7.0	8,800	3.0	660	11.0	21,700
3.0	720	10.0	19,000	3.5	1,150	15.0	38,100
3.5	1,240	13.0	30,000	4.0	1,800	19.0	55,700
				5.0	3,550		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	154	172	198	2,680	14,000	2,440	3,550	5,020	3,570	1,150	365	375
2	151	181	412	6,860	10,700	2,220	3,150	4,520	3,210	1,100	365	340
3	151	163	*680	6,560	27,000	2,060	2,930	3,940	2,890	1,080	365	315
4	151	151	792	4,850	18,700	1,860	2,850	3,900	2,580	1,040	365	295
5	160	142	1,770	3,740	15,500	1,730	2,870	4,290	2,420	974	385	277
6	151	139	1,240	3,060	23,500	1,670	2,910	4,430	3,190	952	395	264
7	139	136	3,420	3,140	17,700	1,660	2,780	4,350	5,050	930	428	264
8	139	133	2,990	4,920	15,600	1,900	2,480	4,650	5,860	880	385	264
9	142	130	1,820	22,100	10,000	2,210	*2,240	4,480	4,740	830	355	250
10	139	133	4,870	11,300	7,180	2,420	2,030	4,160	4,200	767	340	246
11	145	145	5,910	8,040	5,640	2,800	1,920	3,610	3,780	716	330	*234
12	145	206	8,860	12,200	4,580	3,340	2,060	3,250	3,700	692	305	234
13	142	370	5,440	14,300	3,900	3,110	2,550	3,080	3,470	652	300	230
14	139	553	3,740	11,300	3,510	2,690	2,840	3,090	3,060	644	286	222
15	136	553	2,910	*8,020	3,280	2,730	2,580	3,080	2,780	628	282	222
16	133	355	2,330	14,200	3,440	4,480	2,620	2,820	2,530	580	282	210
17	130	266	1,850	28,200	13,000	4,740	3,300	2,580	2,360	552	268	206
18	133	230	1,610	51,600	9,160	4,120	3,300	2,730	2,250	524	259	203
19	136	198	1,460	31,900	6,050	4,270	3,360	6,940	2,090	504	259	203
20	136	181	1,330	24,400	4,850	4,630	3,940	6,420	2,050	498	259	200
21	136	181	1,290	17,300	4,080	4,690	4,430	*6,100	1,800	480	264	200
22	136	175	1,640	12,000	3,640	8,290	4,500	5,830	1,690	456	259	200
23	*142	166	1,650	11,100	3,260	9,340	4,650	5,620	*1,550	450	259	200
24	157	163	1,360	8,000	2,930	8,680	3,900	5,930	1,460	439	277	200
25	166	151	1,170	7,490	2,620	8,830	3,590	5,000	1,380	428	310	196
26	160	148	1,050	7,860	*2,460	6,450	3,740	4,960	1,320	417	559	192
27	148	145	990	6,320	2,390	5,210	5,250	7,430	1,250	406	900	192
28	142	139	930	5,620	2,530	4,690	6,340	6,500	1,250	395	636	222
29	139	142	1,380	8,440	-	4,180	5,140	5,370	1,280	*390	580	350
30	145	160	3,540	9,910	-	3,900	5,140	4,690	1,250	395	524	272
31	157	-	2,930	11,500	-	4,080	-	4,060	-	375	428	-
Total	4,480	6,107	71,562	378,910	241,200	125,420	102,940	142,830	80,010	20,324	11,574	7,278
Mean	145	204	2,308	12,220	8,614	4,046	3,431	4,607	2,667	656	373	243
Cfsm	0.227	0.319	3.61	19.1	13.5	6.32	5.36	7.20	4.17	1.02	0.583	0.380
In.	0.26	0.35	4.16	22.02	14.02	7.29	5.98	8.30	4.65	1.18	0.67	0.42
Ac-ft	8,890	12,110	141,900	751,600	478,400	248,800	204,200	283,300	158,700	40,300	22,960	14,440

Calendar year 1952: Max 21,600 Min 130 Mean 2,246 Cfsm 3.51 In. 47.75 Ac-ft 1,630,000
Water year 1952-53: Max 51,600 Min 130 Mean 3,267 Cfsm 5.10 In. 69.30 Ac-ft 2,366,000

Peak discharge (base, 21,000 cfs).--Jan. 9 (8:30 a.m.) 31,600 cfs (13.40 ft); Jan. 18 (6:30 p.m.) 57,700 cfs (19.43 ft); Feb. 3 (3:30 p.m.) 32,800 cfs (13.76 ft); Feb. 6 (3 a.m.) 29,900 cfs (13.07 ft).

* Discharge measurement made on this day.

Albany power canal near Lebanon, Oreg.

Location.--Lat 44°33'10", long. 122°54'20", in SW¼ sec. 2, T. 12 S., R. 2 W., on left bank an eighth of a mile downstream from spillway and 1 mile north of Lebanon.

Records available.--April 1926 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 322.90 ft above mean sea level, datum of 1929. Prior to June 24, 1938, staff gage at same site and datum.

Average discharge.--27 years, 212 cfs.

Extremes.--1926-53: Maximum daily discharge, 332 cfs Dec. 29, 1936; minimum daily, 10 cfs Apr. 29 to May 4, 1926, July 29, 30, 1927, Oct. 17-28, 1928.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Canal diverts from South Santiam River at Lebanon and discharges into Calapooya River at mouth. Lebanon ditch discharges into canal just below canal intake. Water is used for power and water supply at Albany.

Cooperation.--Recorder inspected by employee of Pacific Power and Light Co.

Revisions (water years).--WSP 1248: 1926, 1930, 1939, 1942.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	107	a120	152	225	257	149	194	204	178	170	196	183
2	105	a140	178	251	240	137	186	198	176	173	197	189
3	102	a130	*205	237	234	138	179	192	169	178	197	186
4	105	a110	205	235	205	142	178	185	161	188	195	179
5	111	a100	230	235	193	136	177	185	158	186	195	176
6	103	a100	225	233	214	136	175	185	174	190	194	177
7	97	a100	234	234	202	134	172	189	199	206	196	167
8	96	a95	228	248	197	145	*165	196	196	211	195	179
9	87	a100	226	243	210	153	159	196	176	207	188	170
10	78	a100	235	213	230	160	154	192	169	201	185	163
11	77	a100	230	208	225	178	151	186	164	207	180	*159
12	78	a110	226	229	195	193	156	176	163	205	179	159
13	79	a160	227	229	172	181	167	173	160	205	178	155
14	84	a180	214	217	157	178	179	173	157	204	175	150
15	81	a200	135	*221	148	178	172	172	151	206	173	150
16	83	a180	106	236	150	225	170	168	146	205	173	144
17	86	a160	140	214	173	198	187	164	141	207	169	137
18	92	a180	185	163	156	195	191	161	140	205	165	127
19	94	a160	178	174	236	195	188	210	138	194	161	129
20	a90	150	172	126	225	198	193	*218	138	189	160	128
21	a85	150	172	153	206	199	200	213	133	203	164	125
22	*85	151	184	198	190	177	201	213	125	205	165	126
23	a90	150	187	207	170	160	203	206	*122	205	162	127
24	a90	144	180	198	160	188	194	210	130	205	167	128
25	a100	140	179	196	148	203	193	204	166	204	180	125
26	a110	122	169	201	*116	213	195	206	187	202	178	125
27	a95	130	164	200	114	217	206	220	182	202	200	125
28	a95	110	162	210	151	208	218	218	183	206	196	132
29	a90	120	172	250	-	192	206	207	181	*203	196	150
30	a95	130	232	249	-	193	205	196	161	199	196	147
31	a100	-	226	244	-	210	-	183	-	194	195	-
Total	2,870	4,022	5,958	6,677	5,274	5,509	5,514	5,999	4,824	6,163	5,648	4,517
Mean	92.6	134	192	215	188	178	184	194	161	199	182	151
Ac-ft	5,690	7,980	11,820	13,240	10,460	10,930	10,940	11,900	9,570	12,220	11,200	8,960

Calendar year 1952: Max 269 **Min** 74 **Mean** 151 **Ac-ft** 109,400
Water year 1952-53: Max 257 **Min** 77 **Mean** 173 **Ac-ft** 124,900

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage, powerplant records, and records for South Santiam River at Waterloo.

Santiam River at Jefferson, Oreg.

Location.--Lat 44°42'55", long. 122°00'40", in SE¼ sec. 11, T. 10 S., R. 3 W., on right bank 350 ft upstream from railroad bridge at Jefferson, 2 miles downstream from confluence of North Santiam and South Santiam Rivers, and 9 miles upstream from mouth.

Drainage area.--1,790 sq mi, approximately.

Records available.--October 1905 to June 1906 (gage heights and discharge measurements only), October 1907 to September 1916, and October 1939 to September 1953 in reports of Geological Survey. Gage-height records collected at same site since April 1904 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 199.63 ft above mean sea level, datum of 1929. Oct. 8, 1905, to June 30, 1906, Oct. 1, 1907, to May 14, 1908, July 1, 1914, to Sept. 30, 1916, Oct. 1, 1939, to Sept. 21, 1940, staff gage at site 350 ft downstream and May 15, 1908, to June 30, 1914, staff gage at site 150 ft downstream, all at datum 3.00 ft higher.

Average discharge.--23 years (1907-16, 1939-53), 7,596 cfs.

Extremes.--Maximum discharge during year, 105,000 cfs Jan. 18 (gage height, 20.54 ft); minimum, 388 cfs Oct. 7 (gage height, 1.91 ft).

1905-6, 1907-16, 1939-53: Maximum discharge, 161,000 cfs Nov. 22, 1909 (gage height, 18.2 ft, from floodmark, site and datum then in use, corresponding gage height at present site, 23.0 ft, from curve of relation; minimum observed, 260 cfs Aug. 15-22. Aug. 24 to Sept. 2, 1940 (gage height, -1.00 ft, site and datum then in use).

Maximum discharge known, about 202,000 cfs Nov. 21, 1921 (gage height, 19.5 ft at railroad bridge 350 ft downstream, datum in use prior to Oct. 1, 1940; corresponding gage height at present site, 24.4 ft, from curve of relation).

Remarks.--Records excellent. Salem Canal diverts from North Santiam River at Stayton for irrigation and power use; most of this water reaches Willamette River through Mill Creek at Salem. Stayton Canal diverts from North Santiam River at Stayton for irrigation of lands near West Stayton; some return flow reaches North Santiam River above station. Albany power canal diverts from South Santiam River at Lebanon; return flow reaches Willamette River at Albany. Flow regulated at times by Detroit Reservoir (see p. 156).

Revisions (water years).--WSP 904: Drainage area. WSP 1094: 1908, 1910, 1912, 1922(M), 1943. WSP 1248: 1911, 1915-16(M).

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 9				Jan. 10 to Sept. 30			
1.9	380	9.0	15,200	2.1	530	9.0	15,200
3.0	1,400	12.0	28,500	3.0	1,350	13.0	34,000
4.0	2,650	14.0	40,000	4.0	2,650	17.0	61,800
6.0	6,270			6.0	6,270	20.0	95,000

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	452	532	532	6,360	33,100	5,390	7,720	9,290	*9,400	3,330	832	1,060
2	444	567	666	11,800	30,400	5,020	6,890	8,570	8,430	3,220	814	994
3	444	540	1,310	15,800	44,900	4,790	6,270	7,650	7,800	3,220	728	976
4	444	516	1,420	13,000	41,600	4,240	5,970	7,220	6,920	3,170	823	940
5	452	492	3,060	10,100	34,100	3,970	5,940	7,800	6,480	2,950	859	895
6	444	484	3,060	8,110	45,300	3,970	5,880	9,010	7,120	*2,980	*895	841
7	396	476	4,840	7,240	36,300	3,860	5,780	9,310	11,600	2,970	1,020	720
8	412	476	6,600	9,310	35,000	3,990	5,330	10,600	15,400	2,820	940	752
9	412	468	4,380	38,900	31,500	4,560	4,910	9,710	12,500	2,800	859	778
10	420	476	8,900	28,600	26,400	4,910	4,580	9,120	10,600	2,500	805	769
11	428	484	11,500	26,000	23,600	5,310	4,160	8,220	9,890	2,370	796	752
12	436	558	20,900	30,200	21,000	6,270	4,150	7,490	9,890	2,180	712	752
13	436	747	14,800	34,000	19,100	*8,410	4,450	7,040	9,200	2,070	656	648
14	428	1,080	10,100	34,500	17,900	5,650	4,980	5,990	8,350	2,090	640	600
15	*412	1,330	7,490	28,000	17,200	5,550	4,720	5,880	7,800	1,790	624	859
16	404	1,140	5,990	32,400	17,600	8,840	4,640	5,530	7,190	1,900	624	832
17	404	873	5,040	49,100	35,100	11,700	5,370	5,120	5,800	1,750	593	832
18	404	747	4,220	85,000	30,300	10,500	5,760	5,060	5,470	1,650	600	823
19	404	675	3,770	79,300	23,500	10,300	5,690	10,600	5,650	1,400	586	868
20	404	639	3,410	49,900	13,500	9,860	6,410	12,200	5,650	1,540	608	877
21	412	603	3,270	*49,000	11,100	9,980	7,360	11,100	4,940	1,470	664	877
22	412	576	3,720	36,000	9,800	15,100	7,440	10,900	4,640	1,350	600	877
23	420	558	3,970	34,600	8,540	20,400	7,960	10,400	4,430	1,250	616	850
24	444	549	3,480	28,000	6,920	17,700	7,590	11,600	4,180	1,250	640	832
25	484	540	3,090	26,700	6,180	19,900	7,260	10,500	3,910	1,250	688	823
26	452	*524	2,830	28,800	5,760	14,900	7,540	10,200	3,750	877	886	868
27	452	516	2,650	26,700	5,530	11,600	9,620	15,500	3,650	841	1,920	994
28	436	500	2,520	23,600	5,510	10,400	15,000	14,700	3,500	922	1,780	1,170
29	452	492	3,000	27,200	-	9,260	11,700	13,700	3,700	922	1,630	1,490
30	452	508	6,620	*28,800	-	8,510	*9,430	12,500	3,630	832	1,490	1,260
31	492	-	7,340	32,700	-	8,840	-	11,000	-	859	1,250	-
Total	13,388	18,666	164,478	939,720	636,940	271,680	200,500	293,510	211,470	60,523	27,178	26,609
Mean	432	622	5,306	30,310	22,750	8,764	6,683	9,468	7,049	1,952	877	887
Ac-ft	26,550	37,020	326,200	‡1,864	‡1,263	538,900	397,700	582,200	419,400	120,000	53,910	52,780

Calendar year 1952: Max 51,300 Min 396 Mean 5,732 Ac-ft 4,161,000
Water year 1952-53: Max 85,000 Min 396 Mean 7,848 Ac-ft 5,682,000

* Discharge measurement made on this day.
‡ Expressed in thousands.

Luckiamute River near Hoskins, Oreg.

Location.--Lat 44°43'10", long. 123°30'10", in NE¼ sec. 11, T. 10 S., R. 7 W., on right bank a quarter of a mile downstream from Benton County line and 3½ miles northwest of Hoskins.

Drainage area.--34 sq mi, approximately.

Records available.--May 1934 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 378.7 ft above mean sea level (river-profile survey).

Average discharge.--19 years, 204 cfs.

Extremes.--Maximum discharge during year, 4,250 cfs Jan. 18 (gage height, 10.77 ft); minimum daily, 5 cfs Oct. 15, 16.
1934-53: Maximum discharge, 5,560 cfs Dec. 14, 1946, Feb. 17, 1949; maximum gage height, 13.22 ft Dec. 14, 1946; minimum daily discharge, that of Oct. 15, 16, 1952.

Remarks.--Records good except those for period of backwater from beaver dam, which are fair. No diversion or regulation above station; log ponds upstream cause diurnal fluctuation at times.

Revisions (water years).--WSP 834: 1936(M).

Rating table, water year 1952-53, except period of backwater from beaver dam (gage height, in feet, and discharge, in cubic feet per second)

1.2	4.8	3.0	385
1.3	12	5.0	1,130
1.4	21	7.0	2,060
1.7	61	10.0	3,740
2.0	117		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7	14	20	376	970	165	240	260	124	42	18	21
2	7	12	40	644	858	155	218	240	115	41	18	20
3	7	11	50	658	1,220	142	200	218	106	40	19	17
4	7	10	70	498	1,000	133	188	192	98	38	25	15
5	7	10	95	379	930	122	168	175	109	37	25	14
6	7	9.5	85	310	974	117	165	160	115	37	21	14
7	7	9.5	400	400	1,010	111	158	168	117	36	21	15
8	7.5	9.5	340	773	834	104	138	192	115	34	20	16
9	6	9.5	*300	1,080	630	96	131	170	109	32	19	14
10	6	10	500	714	501	106	126	158	98	31	18	14
11	6.5	15	400	842	406	*138	122	145	91	28	16	14
12	6.5	25	830	1,050	349	190	140	135	92	28	15	14
13	6.5	40	459	1,110	307	165	*126	122	85	*31	15	14
14	6	55	295	898	289	150	122	115	78	33	15	14
15	5	50	220	782	322	242	117	111	73	31	15	14
16	5	30	172	1,650	591	730	133	104	71	28	16	*14
17	6	20	142	2,540	1,170	613	148	98	68	27	15	14
18	6.5	18	122	*3,320	834	490	135	158	63	26	15	14
19	6.5	17	126	2,680	588	442	126	185	64	26	14	14
20	6.5	15	102	2,040	470	448	119	168	64	25	14	14
21	6.5	14	138	1,410	382	676	115	195	61	23	*14	14
22	7	13	212	1,280	337	1,080	109	286	56	22	13	15
23	8	13	188	1,250	289	954	115	307	55	22	14	15
24	10	13	165	954	255	706	104	277	54	21	17	18
25	11	14	142	978	232	543	98	240	54	20	22	14
26	9	15	126	1,110	215	421	111	220	52	20	41	13
27	*8	15	126	998	195	364	208	200	50	19	28	14
28	*8	10	131	962	182	328	192	*180	54	19	27	38
29	11	10	337	942	-	286	198	162	50	19	43	21
30	15	11	433	894	-	286	262	155	45	18	25	65
31	17	-	385	958	-	262	-	138	-	18	22	-
Total	240.0	518.0	7,151	34,480	16,340	10,765	4,532	5,634	2,386	872	620	527
Mean	7.74	17.3	231	1,122	584	347	151	182	79.5	28.1	20.0	17.6
Cfsm	0.228	0.509	6.79	33.0	17.2	10.2	4.44	5.35	2.34	0.826	0.588	0.518
In.	0.26	0.57	7.82	37.72	17.87	11.78	4.96	6.16	2.61	0.95	0.68	0.58
Ac-ft	476	1,030	14,180	68,390	32,410	21,350	8,990	11,170	4,730	1,730	1,230	1,050

Calendar year 1952: Max 1,910 Min 5 Mean 144 Cfsm 4.24 In. 57.73 Ac-ft 104,700
Water year 1952-53: Max 3,320 Min 5 Mean 230 Cfsm 6.76 In. 91.96 Ac-ft 166,700

Peak discharge (base, 2,000 cfs).--Jan. 18 (3 p.m.) 4,250 cfs (10.77 ft).
* Discharge measurement made on this day.
Note.--Backwater from beaver dam Oct. 1 to Dec. 11; discharge estimated on basis of discharge measurements, weather records, and records for station at Pedee.

Luckiamute River at Pedee, Oreg.

Location.--Lat 44°44'35", long. 123°25'25", in SE¼ sec. 33, T. 9 S., R. 6 W., on left bank half a mile downstream from Pedee Creek and three-quarters of a mile southwest of Pedee.

Drainage area.--115 sq mi.

Records available.--October 1940 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 245.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to July 1, 1949, staff gage at site 1,700 ft downstream at datum 1.85 ft lower.

Average discharge.--13 years, 463 cfs.

Extremes.--Maximum discharge during year, 8,810 cfs Jan. 18 (gage height, 15.43 ft); minimum, 7.1 cfs Oct. 16.
1940-53: Maximum discharge, 13,500 cfs Feb. 17, 1949 (gage height, 18.46 ft, from floodmark, present site and datum), from rating curve extended above 7,800 cfs by logarithmic plotting; minimum observed, 7 cfs Sept. 12, 1944.

Remarks.--Records excellent. Small diversions above station for irrigation. Some diurnal fluctuation in summer caused by log ponds above station.

Revisions (water years).--WSP 964: 1941. WSP 1044: Drainage area. WSP 1248: 1945.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 19				Jan. 20 to Sept. 30			
1.3	9.4	2.7	245	1.5	17	4.0	750
1.4	13	4.0	780	1.8	44	6.0	1,700
1.5	19	7.0	2,260	2.1	88	9.0	3,200
1.9	61	11.0	4,650	2.5	190	12.0	5,200
2.2	112	15.0	8,250	3.0	350		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	28	34	636	1,700	385	535	499	290	110	38	43
2	12	22	75	1,200	1,560	354	491	471	274	104	37	38
3	12	19	124	1,120	2,220	332	452	438	259	94	35	34
4	12	19	145	897	1,970	*318	427	406	247	90	38	30
5	12	18	242	704	2,000	308	399	371	256	86	51	27
6	12	18	212	573	2,000	290	378	340	280	84	46	26
7	12	17	658	726	1,900	277	360	343	271	75	42	27
8	13	17	564	1,380	1,620	271	340	396	265	72	40	29
9	11	17	*446	*2,550	1,280	259	318	346	253	70	37	27
10	11	18	802	1,560	1,040	274	304	326	238	69	34	25
11	12	27	654	1,540	867	301	290	301	220	67	33	25
12	12	43	985	1,820	741	378	326	280	217	66	31	25
13	12	71	686	2,180	642	346	*308	268	208	*67	29	25
14	11	102	450	1,860	599	322	290	262	190	70	27	25
15	9.4	94	336	1,510	633	430	280	250	184	70	27	24
16	9.4	53	273	2,900	1,110	1,130	304	241	175	66	28	*24
17	11	37	236	4,580	2,600	1,150	308	232	160	63	28	24
18	12	34	212	7,240	1,940	1,020	290	290	154	60	27	24
19	12	32	218	*8,170	1,380	984	280	382	154	55	26	23
20	12	28	188	5,180	1,110	988	271	329	154	52	24	23
21	12	27	221	*3,450	912	1,450	256	368	146	51	*23	23
22	13	25	362	2,900	780	2,240	250	487	138	51	23	24
23	14	25	326	2,660	660	1,980	253	591	130	50	24	26
24	19	25	284	1,980	587	1,620	241	567	127	50	26	25
25	21	25	248	1,940	535	1,300	235	515	122	49	38	26
26	17	27	230	2,360	479	1,050	253	475	120	49	81	23
27	*15	28	227	2,130	438	894	438	434	115	46	60	23
28	15	18	221	1,910	406	800	416	*399	122	43	55	42
29	18	18	498	1,810	-	674	416	368	130	40	81	45
30	27	20	699	1,610	-	664	499	343	120	40	57	56
31	31	-	636	1,590	-	591	-	312	-	38	45	-
Total	433.8	952	11,492	70,666	33,709	23,380	10,208	11,630	5,719	1,997	1,191	861
Mean	14.0	31.7	371	2,280	1,204	754	340	375	191	64.4	38.4	28.7
Cfsm	0.122	0.276	3.23	19.8	10.5	6.56	2.96	3.26	1.66	0.560	0.334	0.250
In.	0.14	0.31	3.72	22.85	10.90	7.56	3.30	3.76	1.85	0.65	0.39	0.28
Ac-ft	860	1,890	22,790	140,200	66,860	46,370	20,250	23,070	11,340	3,960	2,360	1,710

Calendar year 1952: Max 4,310 Min 9.4 Mean 316 Cfsm 2.75 In. 37.34 Ac-ft 229,100
Water year 1952-53: Max 7,240 Min 9.4 Mean 472 Cfsm 4.10 In. 55.71 Ac-ft 341,700

Peak discharge (base, 3,500 cfs).--Jan. 18 (7 p.m.) 8,810 cfs (15.43 ft).
* Discharge measurement made on this day.

Luckiamute River near Suver, Oreg.

Location.--Lat 44°47'00", long. 123°14'00", in SW¼SW¼ sec. 18, T. 9 S., R. 4 W., on right bank 10 ft upstream from highway bridge at Helmick State Park, 3 miles northwest of Suver, and 4½ miles downstream from Little Luckiamute River.

Drainage area.--240 sq mi.

Records available.--August 1905 to October 1911, July 1940 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 171.92 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Aug. 18, 1905, to Oct. 31, 1911, staff gage at same site at different datum. Aug. 20 to Oct. 15, 1940, staff gage at present site and datum.

Average discharge.--19 years (1905-11, 1940-53), 943 cfs.

Extremes.--Maximum discharge during year, 14,600 cfs Jan. 19 (gage height, 29.89 ft); minimum, 13 cfs Oct. 17, 18.

1905-11, 1940-53: Maximum discharge, 23,800 cfs Feb. 18, 1949 (gage height, 33.10 ft), from rating curve extended above 14,000 cfs by logarithmic plotting; minimum, that of Oct. 17, 18, 1952.

Maximum stage known, 33.5 ft, probably Dec. 29, 1937, from information by local residents (discharge, 25,000 cfs, from rating curve extended above 14,000 cfs by logarithmic plotting).

Remarks.--Records good except those for period of no gage-height record, which are fair. A few small diversions above station for irrigation; no diversion around station. Some diurnal fluctuation during periods of low flow caused by millpond above station.

Revisions (water years).--WSP 1044: Drainage area. WSP 1094: 1945-46. WSP 1248: 1905-11.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Dec. 7-10)

Oct. 1 to Jan. 16				Jan. 17 to Sept. 30			
1.6	12	15.0	1,930	2.0	36	19.0	2,860
3.0	106	23.0	4,040	3.0	97	24.0	4,520
5.0	280	25.0	5,090	4.0	185	26.0	6,030
8.0	680			6.0	432	28.0	9,810
				11.0	1,180	30.0	14,900

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	43	48	a1,600	3,240	844	1,130	920	547	204	56	75
2	18	38	79	a2,100	2,980	788	1,040	892	511	187	54	71
3	16	32	214	a2,700	3,400	*748	956	832	476	174	53	65
4	16	30	322	a2,400	3,980	696	886	762	450	164	57	59
5	16	28	578	a2,000	3,810	658	830	696	429	154	74	53
6	16	27	460	a1,500	3,960	624	780	632	529	147	74	48
7	16	27	787	a1,300	3,750	596	756	602	510	136	68	48
8	17	27	*1,090	a2,000	3,500	586	708	742	500	128	64	51
9	17	27	850	a3,500	2,880	541	664	709	486	123	59	54
10	19	27	1,330	a5,000	2,280	541	624	625	445	*117	57	50
11	19	30	1,510	a3,500	1,850	596	600	577	405	107	53	46
12	19	48	1,830	a3,500	1,550	739	618	540	383	111	48	45
13	18	80	1,830	a4,000	1,350	756	*630	502	380	109	44	46
14	18	144	1,140	a4,500	1,220	679	578	492	344	110	41	45
15	18	230	821	a3,800	1,220	718	546	459	325	112	38	42
16	17	159	630	a3,500	1,610	1,640	540	442	306	108	40	41
17	16	94	521	5,950	3,320	2,460	626	415	288	99	41	40
18	16	68	448	10,000	4,490	2,010	595	417	272	91	39	40
19	16	60	459	13,800	3,510	1,980	559	720	266	86	38	40
20	18	54	424	11,200	2,540	1,770	532	625	270	85	*37	38
21	19	51	400	*9,400	2,000	2,180	500	646	261	82	37	37
22	20	47	694	6,420	1,670	2,980	476	812	248	81	36	36
23	21	44	766	6,490	1,460	3,640	481	1,060	233	79	37	42
24	24	41	648	5,260	1,280	3,200	480	1,120	221	78	40	*44
25	29	41	556	4,240	1,150	2,910	447	998	216	75	49	43
26	31	43	491	4,450	1,050	2,230	464	*930	212	74	91	43
27	*27	41	473	4,860	976	1,820	714	877	207	74	124	40
28	25	41	443	4,160	910	1,660	853	787	210	75	95	39
29	25	42	a750	3,810	-	1,440	757	712	228	65	105	81
30	26	43	a1,200	3,420	-	1,290	878	648	233	61	120	72
31	36	-	a1,800	3,090	-	1,280	-	602	-	56	86	-
Total	627	1,707	23,592	143,450	66,936	44,580	20,248	21,793	10,391	3,352	1,855	1,474
Mean	20.2	56.9	761	4,627	2,391	1,438	675	703	346	108	59.8	49.1
Cfsm	0.084	0.237	3.17	19.3	9.96	5.99	2.81	2.93	1.44	0.450	0.249	0.205
In.	0.10	0.26	3.66	22.23	10.37	6.91	3.14	3.38	1.61	0.52	0.29	0.23
Ac-ft	1,240	3,390	46,790	284,500	132,800	88,420	40,160	43,230	20,610	6,650	3,680	2,920

Calendar year 1952: Max 8,760 Min 15 Mean 613 Cfsm 2.55 In. 34.78 Ac-ft 445,200
Water year 1952-53: Max 13,800 Min 16 Mean 932 Cfsm 3.88 In. 52.70 Ac-ft 674,400

Peak discharge (base, 6,600 cfs).--Jan. 19 (6 to 7 a.m.) 14,600 cfs (29.89 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records and records for South Yamhill River near Whiteson and station near Hoskins.

Willamette River at Salem, Oreg.

Location.--Lat 44°56'40", long. 123°02'30", in SW¼ sec. 22, T. 7 S., R. 3 W., on right bank 300 ft upstream from Center Street bridge at Salem and at mile 85.1.

Drainage area.--7,280 sq mi, approximately.

Records available.--October 1909 to December 1916, October 1927 to September 1953. Gage-height records collected at about the same site since 1892 are contained in reports of U. S. Weather Bureau.

Gage.--Water-stage recorder. Datum of gage is 114.14 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Oct. 1, 1909, to Dec. 31, 1916, staff gage at site half a mile upstream at about present datum. Oct. 1, 1927, to Nov. 26, 1934, staff gage at Center Street Bridge at present datum.

Average discharge.--33 years, 22,970 cfs.

Extremes.--Maximum discharge during year, 251,000 cfs Jan. 20 (gage height, 26.17 ft); minimum, 3,420 cfs Nov. 29 (gage height, -4.45 ft).
1909-16, 1927-53: Maximum discharge, 315,000 cfs Jan. 8, 1923 (gage height, 30.3 ft); minimum, 2,470 cfs Aug. 27, 1940 (gage height, -4.45 ft).
Maximum discharge known, 500,000 cfs Dec. 4, 1861 (gage height, about 39 ft), from rating curve extended above 250,000 cfs in 1916. Flood of Feb. 5, 1890, reached a stage of 37.1 ft. Flood of Jan. 8, 1923, was measured at 344,000 cfs, at or very close to peak (gage height, 30.35 ft).

Remarks.--Records excellent except those for periods of no gage-height record, which are fair. Many small diversions for irrigation above station; part of flow of Salem Canal, which diverts water from North Santiam River, returns to Willamette River below station through Mill Creek at Salem. Flow regulated at times by Cottage Grove, Fern Ridge, Dorena, and Detroit Reservoirs (see pp.125,147,128,156). Records of chemical analyses and water temperatures for the water year 1953 are given in WSP 1293.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

-4.4	3,500	8.0	56,500
-3.5	5,000	12.0	85,000
-2.0	9,000	18.0	140,000
1.0	20,500	25.0	233,000

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,800	3,890	*3,620	22,800	75,700	24,100	31,600	31,200	32,800	12,700	5,780	a6,400
2	4,800	3,940	3,800	25,700	77,100	23,600	28,600	31,400	30,000	12,400	5,750	a6,400
3	4,840	3,940	4,560	40,500	*85,000	22,200	26,400	32,300	27,700	12,200	5,800	a6,400
4	4,820	3,840	6,720	42,500	106,000	20,600	24,500	*27,100	25,700	11,800	6,000	a6,200
5	4,780	3,770	8,430	*34,600	120,000	19,200	23,300	25,400	24,000	12,000	6,250	a6,000
6	4,780	3,740	10,900	28,300	136,000	18,200	22,600	25,900	23,800	12,000	6,380	a6,000
7	4,720	3,710	12,700	25,200	136,000	17,500	22,300	27,500	27,900	11,800	6,550	a5,800
8	4,660	3,650	21,500	29,200	113,000	17,000	21,700	28,700	37,300	11,500	6,480	*6,000
9	4,680	3,660	27,500	57,000	126,000	17,400	20,600	a30,000	43,200	11,400	6,100	6,080
10	4,680	3,640	24,600	87,600	113,000	18,400	19,300	a30,000	40,700	11,100	5,900	5,880
11	4,680	3,620	32,600	91,500	88,000	19,500	18,200	28,600	36,100	10,400	5,750	5,750
12	4,720	3,660	43,400	91,000	66,900	21,000	17,400	26,500	33,200	10,000	5,700	5,750
13	4,740	3,920	42,000	87,700	54,300	23,300	17,400	24,600	30,900	9,660	5,580	5,920
14	*4,640	4,500	33,400	96,100	47,800	23,400	18,100	22,800	28,800	9,600	5,520	5,700
15	4,600	5,400	25,500	99,200	44,160	22,100	18,500	21,900	26,500	9,120	5,420	5,720
16	4,540	5,800	20,700	88,100	43,500	26,100	18,000	21,600	24,800	8,940	5,400	5,850
17	4,500	*5,320	17,200	93,900	59,400	*36,200	18,300	20,700	22,700	8,640	5,500	5,780
18	4,340	4,740	14,700	121,000	82,000	38,000	19,700	19,700	21,200	8,250	5,400	5,750
19	4,250	4,400	13,200	183,000	88,700	37,800	19,900	22,900	20,500	7,770	5,320	5,750
20	4,130	4,200	12,100	*233,000	73,500	38,200	20,100	32,600	20,200	7,680	5,280	5,750
21	4,080	3,920	11,300	233,000	53,600	43,800	21,500	39,000	18,900	7,650	5,280	5,650
22	4,060	3,780	11,800	184,000	43,800	50,700	22,500	40,500	17,600	7,410	5,280	5,750
23	4,080	3,760	13,400	150,000	37,800	64,000	24,100	40,300	16,900	7,200	5,280	6,050
24	4,100	3,680	13,900	124,000	33,400	66,400	25,300	41,000	16,100	6,950	a5,400	5,900
25	4,140	3,590	12,800	98,500	29,700	66,200	24,800	43,200	15,300	7,020	a5,600	5,820
26	4,180	3,580	11,600	88,500	27,200	63,300	23,600	41,900	14,700	6,750	a6,200	5,780
27	4,040	a3,570	10,700	88,400	25,300	54,000	23,600	43,400	14,300	*6,320	a7,800	5,820
28	3,900	3,560	10,200	83,600	24,300	45,100	31,800	49,100	13,600	6,320	a8,000	6,080
29	3,950	3,500	10,700	74,300	-	39,300	35,200	47,700	13,200	6,080	a7,600	6,420
30	3,980	3,520	14,800	72,500	-	35,200	33,000	42,400	*12,900	6,000	a7,400	6,600
31	3,880	-	21,800	73,400	-	33,600	-	37,300	-	5,820	a6,800	-
Total	137,090	119,800	522,130	‡2,848.1	‡2,031.1	‡1,045.4	691,900	997,200	731,500	282,480	186,500	178,750
Mean	4,422	3,993	16,840	91,870	72,540	33,720	23,060	32,170	24,380	9,112	6,016	5,958
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	271,900	237,600	‡1,036	‡5,649	‡4,029	‡2,074	‡1,372	‡1,978	‡1,451	560,300	369,900	354,500

Calendar year 1952: Max 141,000 Min 3,500 Mean 20,420 Cfsm 2.80 In. 38.19 Ac-ft 14,830,000
Water year 1952-53: Max 233,000 Min 3,500 Mean 26,770 Cfsm 3.68 In. 49.91 Ac-ft 19,380,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for station at Albany and Santiam River at Jefferson.

Mill Creek at penitentiary annex, near Salem, Oreg.

Location.--Lat 44°52'55", long. 122°58'35", in NE¼ sec. 18, T. 8 S., R. 2 W., on left bank at State penitentiary annex, 2¾ miles downstream from Battle Creek, 5 miles southeast of Salem, and 7 miles upstream from mouth.

Drainage area.--104 sq mi.

Records available.--October 1940 to September 1953 in reports of Geological Survey. November 1938 to September 1941 in reports of Oregon State engineer.

Gage.--Water-stage recorder. Datum of gage is 231.96 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--14 years (1939-53), 368 cfs.

Extremes.--Maximum discharge during year, 3,870 cfs Jan. 18 (gage height, 6.61 ft); minimum daily, 98 cfs Sept. 20.
1938-53: Maximum discharge, 5,140 cfs Feb. 18, 1949 (gage height, 7.67 ft); minimum, 44 cfs July 4, 1939, July 6, 1949.
Maximum discharge known, 8,320 cfs Dec. 29, 1937, computed by velocity-area method on basis of discharge measurement of 7,300 cfs made that day.

Remarks.--Records good except those for periods of shifting control, which are fair. Salem power canal diverts water to Mill Creek from North Santiam River at Stayton; some diversions for irrigation from canal and creek above station. Flow diverted for irrigation on left bank between gage and control is not included in record. Diurnal fluctuations caused by changes at headgates and small powerplants above station.

Revisions.--WSP 1218: Drainage area.

Rating tables, water year 1952-53, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
0.6	121	3.0	940	0.2	90	3.0	840
1.0	198	4.0	1,560	.5	130	5.0	1,900
1.5	318	7.0	4,320	1.0	220	6.5	3,050
2.0	488			2.0	480		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	141	186	206	465	678	220	389	230	257	153	163	133
2	137	194	217	677	640	202	352	222	220	148	158	122
3	137	182	241	562	1,210	192	316	220	200	*167	168	122
4	128	180	232	446	916	172	293	208	183	165	174	120
5	121	178	304	394	1,080	160	274	204	179	160	168	115
6	121	180	*321	351	*1,020	148	250	198	220	160	168	114
7	158	178	526	682	920	194	239	212	230	158	172	111
8	145	174	432	1,080	748	192	224	220	278	163	141	115
9	154	172	313	2,020	587	185	214	230	222	161	141	148
10	160	176	650	1,120	498	194	202	222	190	158	135	154
11	154	194	496	1,090	432	216	*190	204	179	151	132	156
12	162	202	418	1,310	373	237	196	196	194	149	122	156
13	154	202	304	1,820	336	230	208	192	160	143	126	140
14	*150	213	270	1,330	323	204	190	196	140	167	126	126
15	148	211	239	920	368	232	179	194	128	158	127	136
16	147	180	221	*1,430	649	637	181	194	183	158	132	156
17	147	182	208	2,080	1,700	702	192	190	167	149	135	156
18	145	174	202	3,470	*1,460	626	177	218	176	148	133	*146
19	148	176	208	2,960	836	710	172	310	183	141	126	114
20	150	178	194	2,620	646	688	163	255	179	149	*128	98
21	152	174	223	1,820	534	760	160	298	174	143	135	105
22	154	182	291	1,320	468	1,210	200	373	172	136	129	126
23	154	178	246	980	409	948	200	*420	167	177	128	148
24	168	172	226	776	360	808	196	423	165	183	136	165
25	143	170	211	1,150	313	932	190	542	165	176	136	168
26	184	168	206	1,530	278	650	212	629	172	143	153	170
27	174	166	211	1,150	250	545	290	840	187	176	148	172
28	172	180	208	832	*243	608	241	548	190	138	140	179
29	176	168	361	720	-	510	230	420	172	161	140	176
30	186	168	526	598	-	504	224	357	161	165	148	168
31	172	-	421	608	-	465	-	300	-	163	167	-
Total	4,742	5,438	9,332	38,291	18,275	14,281	6,744	9,465	5,593	4,865	4,435	4,215
Mean	153	181	301	1,235	653	461	225	305	186	157	143	140
Ac-ft	9,410	10,790	18,510	75,950	36,250	28,330	13,380	18,770	11,090	9,650	8,800	8,360

Calendar year 1952: Max 2,580 Min 45 Mean 298 Ac-ft 216,200
Water year 1952-53: Max 3,470 Min 98 Mean 344 Ac-ft 249,300

* Discharge measurement made on this day.
Note.--Shifting-control method used Jan. 19, 20, Aug. 22 to Sept. 30.

Mill Creek at Salem, Oreg.

Location.--Lat 44°56'05", long. 123°01'00", in NE¼ sec. 26, T. 7 S., R. 3 W., on left bank at State Street Bridge in Salem, 220 ft downstream from 19th Street diversion.

Drainage area.--110 sq mi.

Records available.--October 1940 to September 1953 in reports of Geological Survey. November, December 1934, and July 1938 to September 1941 in reports of Oregon State engineer.

Gage.--Water-stage recorder. Datum of gage is 166.12 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Nov. 2 to Dec. 31, 1934, staff gage three-quarters of a mile downstream at different datum. July 21, 1938, to Oct. 9, 1940, water-stage recorder at site 200 ft upstream at different datum.

Average discharge.--14 years (1939-53), 143 cfs.

Extremes.--Maximum discharge during year, 1,110 cfs Jan. 18 (gage height, 5.71 ft); minimum, 4.1 cfs Nov. 29.
1938-53: Maximum discharge recorded, 1,230 cfs Feb. 19, 1949 (gage height, 6.38 ft); no flow Oct. 2, 1938.

Remarks.--Records good except those for period of no gage-height record, which are fair. Salem power canal diverts water into Mill Creek near Stayton; several diversions from Mill Creek, including Shelton flood bypass 1½ miles upstream and 19th Street power diversion 220 ft upstream. Diurnal fluctuation caused by powerplants above station.

Revisions.--WSP 1218: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.5	9.5	1.5	133
.6	16	2.0	236
.8	33	3.0	486
1.0	55	5.0	970

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	69	a80	267	291	96	224	96	144	31	33	21
2	22	66	a100	361	265	82	205	94	104	23	33	16
3	20	66	a110	320	411	84	188	92	84	*31	43	15
4	16	56	a110	272	372	68	184	82	72	30	45	14
5	14	59	a140	241	398	48	166	80	56	29	44	12
6	13	55	*a210	215	387	35	142	74	88	27	42	24
7	34	62	289	313	359	70	115	87	93	27	47	9.5
8	26	51	277	418	320	81	102	88	144	29	30	11
9	34	48	198	658	262	78	96	101	101	28	27	21
10	37	41	320	403	220	75	88	92	74	27	24	25
11	33	63	296	369	200	105	*82	76	54	24	20	26
12	39	62	255	470	180	128	84	69	92	21	19	27
13	38	65	188	564	164	124	99	66	48	16	19	24
14	*37	72	146	509	156	99	87	65	35	30	19	18
15	37	72	131	398	170	110	69	65	24	25	17	24
16	33	61	113	*483	255	113	65	63	49	24	19	31
17	33	69	107	650	616	395	78	63	40	23	21	34
18	30	61	101	939	*585	310	61	63	50	23	20	31
19	31	59	99	864	385	356	55	164	44	20	18	16
20	36	63	90	807	301	344	51	115	47	24	*19	11
21	38	69	109	663	258	374	41	156	43	23	21	11
22	40	66	168	473	227	494	74	227	45	20	18	13
23	39	62	139	398	198	468	74	*272	39	42	14	23
24	51	61	120	322	176	379	65	291	36	45	16	33
25	42	59	109	413	160	455	63	339	37	47	16	*45
26	65	55	137	502	133	349	72	382	40	28	23	47
27	55	48	109	429	117	298	146	494	53	43	24	51
28	56	66	105	342	*112	313	110	374	58	24	22	65
29	59	43	209	310	-	291	96	289	42	28	21	59
30	70	a45	303	258	-	267	94	241	37	33	24	48
31	65	-	270	250	-	260	-	205	-	33	37	-
Total	1,171	1,794	5,138	13,881	7,678	6,749	3,076	4,965	1,873	878	795	805.5
Mean	37.8	59.8	166	448	274	218	103	160	62.4	28.3	25.6	26.8
Ac-ft	2,320	3,560	10,190	27,530	15,230	13,390	6,100	9,850	3,720	1,740	1,580	1,600

Calendar year 1952: Max 652 Min 9.0 Mean 128 Ac-ft 93,170
Water year 1952-53: Max 939 Min 9.5 Mean 134 Ac-ft 96,810

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of 1 discharge measurement, recorded range in stage, and records for station at penitentiary annex near Salem.

South Yamhill River near Willamina, Oreg.

Location.--Lat 45°02'50", long. 123°30'10", in sec. 14, T. 6 S., R. 7 W., on left bank 2¼ miles southwest of Willamina and 3 miles upstream from Willamina Creek.

Drainage area.--133 sq mi.

Records available.--May 1934 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 235.55 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--19 years, 600 cfs.

Extremes.--Maximum discharge during year, 9,760 cfs Jan. 19 (gage height, 11.07 ft); minimum, 2.6 cfs Oct. 11 (gage height, 0.36 ft); minimum daily, 5.6 cfs Oct. 11.
1934-53: Maximum discharge, 15,200 cfs Feb. 10, 1949 (gage height, 14.80 ft); minimum, that of Oct. 11, 1952; minimum daily, 5.6 cfs Sept. 18, 1951, Oct. 11, 1952.

Remarks.--Records good except those for periods of backwater from beaver dam or debris, which are fair. Slight regulation occasionally during summer by millpond upstream. No diversion above station.

Revisions.--WSP 814: Drainage area.

Rating table, water year 1952-53, except periods of backwater from beaver dam or debris (gage height, in feet, and discharge, in cubic feet per second)

0.3	2.0	3.0	845
.4	6.0	4.0	1,470
.5	12	5.0	2,250
.7	30	7.0	4,270
.9	58	9.0	6,800
1.2	124	10.5	8,920
2.0	377		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	21	62	1,170	1,670	419	615	595	316	114	38	56
2	12	21	154	2,280	1,530	392	540	540	295	106	37	48
3	9.4	16	287	2,370	2,150	366	491	495	282	99	36	44
4	9.4	15	906	1,580	2,020	340	455	451	266	92	41	38
5	9.4	15	645	1,180	2,150	319	427	415	262	90	48	35
6	9.4	15	647	924	2,290	298	439	377	282	84	44	32
7	*9.4	15	1,670	1,430	2,140	288	431	392	266	79	42	32
8	8.8	16	1,160	3,960	1,700	269	385	522	288	75	38	31
9	8.8	17	960	5,050	1,350	262	355	483	295	71	36	29
10	8.2	18	1,670	3,070	1,090	262	340	431	285	*68	34	26
11	5.6	32	*1,240	4,380	894	366	336	388	256	66	34	23
12	9.4	55	1,470	3,860	745	531	431	358	266	66	32	25
13	10	109	960	3,000	650	*455	392	330	243	66	29	23
14	8.2	189	685	2,480	650	404	*373	322	222	69	28	21
15	7.1	163	495	2,100	685	625	351	302	204	71	28	21
16	6.6	81	415	3,960	1,320	2,510	377	285	189	64	29	20
17	6.6	56	344	4,780	2,700	1,850	404	272	177	56	29	19
18	6.1	42	302	7,950	2,140	1,700	362	346	163	55	30	18
19	11	37	292	8,420	1,630	1,540	351	423	180	53	25	18
20	12	35	259	6,240	1,320	1,580	333	400	189	50	26	17
21	13	31	312	4,080	1,090	2,020	316	531	166	48	25	18
22	14	29	555	3,420	972	2,310	305	730	154	47	28	20
23	17	29	463	*3,100	812	2,100	322	760	146	48	26	*21
24	17	28	388	2,300	700	1,780	295	685	135	47	*28	21
25	18	27	344	2,630	615	1,440	279	*625	135	45	50	19
26	16	26	308	2,690	545	1,130	292	570	132	47	122	18
27	15	24	344	2,300	487	966	615	500	129	45	97	18
28	14	21	404	2,140	451	906	513	451	135	41	79	56
29	*16	24	1,130	1,990	-	755	491	415	135	41	114	52
30	*15	25	1,650	1,760	-	765	645	381	116	40	77	182
31	23	-	1,180	1,740	-	690	-	347	-	38	64	-
Total	356.4	1,232	21,701	98,334	36,496	29,638	12,261	14,122	6,309	1,981	1,394	1,001
Mean	11.5	41.1	700	3,172	1,303	956	409	456	210	63.9	45.0	33.4
Cfsm	0.086	0.309	5.26	23.8	9.80	7.19	3.08	3.43	1.58	0.480	0.338	0.251
In.	0.10	0.34	6.07	27.50	10.21	8.29	3.43	3.95	1.76	0.55	0.39	0.28
Ac-ft	707	2,440	43,040	195,000	72,390	58,790	24,320	28,010	12,510	3,930	2,760	1,990

Calendar year 1952: Max 5,240 Min 5.6 Mean 435 Cfsm 3.27 In. 44.48 Ac-ft 315,500
Water year 1952-53: Max 8,420 Min 5.6 Mean 616 Cfsm 4.63 In. 62.87 Ac-ft 445,900

Peak discharge (base, 5,700 cfs).--Jan. 8 (7 p.m.) 6,670 cfs (8.91 ft); Jan. 19 (5 a.m.) 9,760 cfs (11.07 ft).

* Discharge measurement made on this day.

Note.--Backwater from beaver dam or debris Oct. 1, Oct. 7 to Dec. 3, June 6 to Aug. 10, Aug. 27 to Sept. 30.

Willamina Creek near Willamina, Oreg.

Location.--Lat 45°08'30", long. 123°29'35", in W½NE¼ sec. 13, T. 5 S., R. 7 W., on left bank 4½ miles north of Willamina and 7 miles upstream from mouth.

Drainage area.--65 sq mi, approximately.

Records available.--June 1934 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 315.1 ft above mean sea level (river-profile survey). Prior to Oct. 1, 1939, at datum 1.00 ft higher.

Average discharge.--19 years, 246 cfs.

Extremes.--Maximum discharge during year, 4,170 cfs Jan. 18 (gage height, 8.63 ft); minimum, 9.3 cfs Oct. 15.
1934-53: Maximum discharge, 6,380 cfs Feb. 17, 1949 (gage height, 10.25 ft), from rating curve extended above 3,400 cfs by logarithmic plotting; minimum, 9 cfs Sept. 3, 4, 1934, Sept. 9, 1935, Aug. 8-10, 19, Sept. 22-27, 1939, Aug. 17, 18, 1940.
Flood of Mar. 31, 1931, reached a stage of about 12 ft, from information by local resident (discharge, 9,500 cfs).

Remarks.--Records good. No regulation or diversion above station.

Revisions.--WSP 964: Drainage area.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
1.2	8.8	3.0	260	1.5	16	3.0	241
1.4	15	4.0	580	1.6	21	4.0	555
1.6	24	5.0	1,040	1.8	37	5.0	1,000
1.9	49	6.0	1,620	2.2	86	6.0	1,620
2.4	123	8.0	3,430	2.5	134	8.0	3,430

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	22	26	410	842	226	312	238	158	67	27	28
2	11	17	51	786	801	214	288	221	148	a65	26	25
3	10	15	65	736	965	198	264	211	141	a60	26	23
4	11	14	152	560	880	182	246	198	134	a55	32	21
5	10	14	132	438	1,020	174	228	185	143	a55	33	20
6	9.9	14	138	358	1,010	166	231	168	147	a50	30	20
7	9.9	14	397	447	910	160	221	176	134	a50	30	21
8	10	13	319	1,020	742	150	200	204	131	a48	27	22
9	11	13	252	1,230	603	145	189	185	122	a46	27	21
10	11	14	442	920	501	148	180	168	115	*45	24	21
11	11	24	*322	1,320	424	168	176	160	109	45	22	20
12	11	36	410	1,150	365	204	193	150	107	42	20	19
13	11	51	305	965	323	*202	193	145	104	44	19	19
14	11	80	228	900	309	189	*187	139	98	45	19	19
15	9.6	56	178	826	323	251	176	132	94	44	19	19
16	9.9	33	150	1,580	600	706	187	131	90	41	20	19
17	10	25	129	1,990	1,000	627	180	124	86	38	21	20
18	11	22	120	3,300	837	619	170	158	83	35	20	20
19	11	20	116	3,240	675	603	166	176	86	35	19	21
20	12	19	103	2,460	575	591	158	166	83	35	19	20
21	13	18	127	1,740	480	796	152	207	82	34	19	18
22	13	17	265	*1,680	442	935	150	261	78	32	18	19
23	14	17	222	1,470	383	915	150	306	75	32	19	*20
24	17	17	183	1,120	347	814	141	306	75	32	*28	19
25	14	17	159	1,090	306	684	138	*274	72	32	39	17
26	13	17	146	1,070	280	555	156	261	71	32	68	16
27	13	15	142	955	261	470	315	234	72	31	48	16
28	13	15	148	1,070	241	438	258	211	75	30	41	32
29	14	16	305	1,070	-	374	246	198	75	29	52	24
30	*16	18	466	910	-	374	261	187	69	28	34	63
31	19	-	365	890	-	344	-	168	-	27	28	-
Total	371.3	683	6,583	37,701	16,445	12,622	6,112	6,048	3,057	1,284	874	662
Mean	12.0	22.8	212	1,216	587	407	204	195	102	41.4	28.2	22.1
Cfsm	0.185	0.351	3.26	18.7	9.03	6.26	3.14	3.00	1.57	0.637	0.434	0.340
In.	0.21	0.39	3.77	21.57	9.41	7.22	3.50	3.46	1.75	0.73	0.50	0.38
Ac-ft	736	1,350	13,060	74,780	32,620	25,040	12,120	12,000	6,060	2,550	1,730	1,310

Calendar year 1952: Max 2,360 Min 9.6 Mean 185 Cfsm 2.85 In. 38.68 Ac-ft 134,100
Water year 1952-53: Max 3,300 Min 9.6 Mean 253 Cfsm 3.89 In. 52.89 Ac-ft 183,400

Peak discharge (base, 2,300 cfs).--Jan. 18 (2:30 p.m.) 4,170 cfs (8.63 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather record and record for South Yamhill River near Willamina.

South Yamhill River near Whiteson, Oreg.

Location.--Lat 45°10'10", long. 123°12'25", in NW¼ sec. 5, T. 5 S., R. 4 W., near left bank on downstream side of Whiteson Bridge on Pacific Highway West, 1 mile downstream from Salt Creek and 1¼ miles northwest of Whiteson.

Drainage area.--502 sq mi.

Records available.--July 1940 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 82.30 ft above mean sea level, datum of 1929. Prior to Sept. 20, 1940, wire-weight gage at same site and datum.

Average discharge.--13 years, 1,658 cfs.

Extremes.--Maximum discharge during year, 21,700 cfs Jan. 19 (gage height, 41.41 ft); minimum, 12 cfs Oct. 10 (gage height, 0.91 ft).
1940-53: Maximum discharge, 28,900 cfs Feb. 11, 1949 (gage height, 43.39 ft); minimum, 8.5 cfs Sept. 25, 26, 1952 (gage height, 0.80 ft).

Remarks.--Records fair. Slight regulation during low-water periods from log pond upstream. Small diversions above station for irrigation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Sept. 22-30)

0.9	12	15.0	2,800
1.2	24	20.0	4,360
1.5	43	30.0	8,350
2.5	135	37.0	12,400
4.0	334	40.0	17,500
7.0	870	42.0	23,500
11.0	1,740		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	45	79	3,240	5,440	1,440	2,130	1,700	1,010	304	80	a150
2	20	65	167	4,380	4,930	1,330	1,890	1,580	*924	290	76	a130
3	19	57	480	5,900	5,330	1,250	1,700	1,450	868	271	74	a110
4	16	49	1,040	5,480	6,200	1,160	1,540	1,320	813	250	79	a100
5	18	40	2,030	4,030	6,170	1,090	1,430	1,200	769	a230	94	a90
6	20	39	1,260	3,000	6,940	1,030	1,360	1,100	894	a210	105	a85
7	*18	38	2,420	2,670	6,690	982	1,390	1,040	834	194	96	a80
8	16	38	3,580	5,340	5,940	936	1,280	1,280	809	176	89	a75
9	16	36	2,430	9,750	4,710	902	1,190	1,300	824	*167	86	a70
10	15	38	3,220	*12,300	3,730	882	1,110	1,210	790	155	82	a65
11	18	39	3,310	10,500	3,060	934	1,060	1,110	724	147	72	a60
12	21	58	*3,190	10,600	2,560	1,340	1,160	1,020	662	145	64	a55
13	19	144	3,240	9,990	2,200	1,420	1,200	928	675	147	59	a60
14	19	282	2,160	8,840	1,950	1,310	1,140	892	608	150	53	a55
15	17	552	1,590	7,430	2,040	1,330	1,090	847	558	159	49	a52
16	18	320	1,260	7,540	2,530	*3,860	*1,050	811	522	155	51	a50
17	17	186	1,080	10,000	5,760	6,550	1,170	771	485	143	52	a48
18	16	131	934	13,300	7,730	5,550	1,120	735	447	122	49	a46
19	18	111	885	20,700	6,520	5,170	1,070	1,110	437	113	51	a45
20	20	96	809	17,700	4,870	4,600	1,020	1,060	469	110	52	a44
21	22	90	750	*15,500	3,810	5,440	958	1,160	451	109	45	a42
22	22	83	1,230	12,900	3,170	6,150	922	1,560	413	103	45	40
23	27	79	1,550	11,400	2,870	6,480	920	2,100	385	102	51	*52
24	31	80	1,300	9,780	2,450	5,650	898	2,340	363	104	56	54
25	33	77	1,120	8,020	2,140	5,480	842	2,080	345	99	*57	56
26	a38	72	996	*8,280	1,900	4,380	859	1,860	334	100	a100	50
27	a35	72	948	8,620	1,720	3,500	1,440	1,690	319	105	a220	49
28	a32	74	972	7,630	1,560	3,160	1,950	1,510	328	95	a160	56
29	a32	73	1,550	6,970	-	2,840	1,640	1,350	356	83	a140	100
30	*32	74	3,280	6,200	-	2,470	1,720	1,210	330	80	a200	108
31	37	-	3,820	5,340	-	2,450	-	1,110	-	80	a170	-
Total	700	3,138	52,650	273,330	114,920	91,066	38,249	40,434	17,746	4,698	2,657	2,077
Mean	22.6	105	1,698	8,817	4,104	2,938	1,275	1,304	592	152	85.5	69.2
Cfsm	0.045	0.209	3.38	17.56	8.18	5.85	2.54	2.60	1.18	0.303	0.170	0.138
In.	0.05	0.23	3.90	20.25	8.51	6.75	2.83	3.00	1.31	0.35	0.20	0.15
Ac-ft	1,390	6,220	104,400	542,100	227,900	180,600	75,870	80,200	35,200	9,320	5,270	4,120

Calendar year 1952: Max 15,300 Min 9.2 Mean 1,189 Cfsm 2.37 In. 32.25 Ac-ft 863,200
Water year 1952-53: Max 20,700 Min 15 Mean 1,758 Cfsm 3.50 In. 47.53 Ac-ft 1,273,000

Peak discharge (base, 9,300 cfs).--Jan. 10 (6 a.m.) 13,600 cfs (37.99 ft); Jan. 19 (6 p.m.) 21,700 cfs (41.41 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for station near Willamina.

Haskins Creek Reservoir near McMinnville, Oreg.

Location.--Lat 45°18'40", long. 123°21'15", in NW¼ sec. 18, T. 3 S., R. 5 W., on control tower 250 ft above axis of dam and 11 miles northwest of McMinnville.

Drainage area.--7.1 sq mi, approximately.

Records available.--October 1951 to September 1953.

Gage.--Staff gage read once daily. Datum of gage is at mean sea level (surveys of city of McMinnville).

Extremes.--Maximum contents during year, 744 acre-ft Dec. 10, 11 (elevation, 835.5 ft); reservoir empty most of time Dec. 18 to Apr. 9.
1951-53: Maximum contents, 744 acre-ft Apr. 6-9, Dec. 10, 11, 1952; reservoir empty most of time during winter months.

Remarks.--Dam is earth-fill construction, equipped with three siphon spillways, which act as overflow weirs until priming occurs (approximately, 835.5 ft elevation). Capacity of reservoir is 733 acre-ft between elevations 761.5 ft, invert of outlet tunnel (about 5 ft in diameter), and 835 ft, crest of siphon spillways. Rated capacity of each siphon is 350 cfs. Under normal operation, reservoir is filled in the spring (April or May), and drained when fall rains start. There is no planned storage during winter months; however, during periods of heavy runoff, inflow may be greater than capacity of outlet tunnel, and there may be some temporary storage.

Cooperation.--Elevations furnished by city of McMinnville.

Monthly elevation and contents, water year October 1952 to September 1953

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	823.0	489	-
Oct. 31	818.5	416	-73
Nov. 30	816.7	388	-28
Dec. 31	-	0	-388
Calendar year 1952	-	-	0
Jan. 31	-	0	0
Feb. 28	-	0	0
Mar. 31	-	0	0
Apr. 30	835.4	742	+742
May 31	835.4	742	0
June 30	835.1	735	-7.0
July 31	834.8	728	-7.0
Aug. 31	835.1	735	+7.0
Sept.30	829.4	611	-124
Water year 1952-53	-	-	+122

† Elevation at 12 p.m.

Haskins Creek below reservoir, near McMinnville, Oreg.

Location.--Lat 45°18'40", long. 123°20'55", in NE¼ sec. 18, T. 3 S., R. 5 W., on right bank 800 ft below dam of McMinnville water-supply reservoir and 11 miles northwest of McMinnville.

Drainage area.--7.1 sq mi, approximately.

Records available.--October 1951 to September 1953.

Gage.--Water-stage recorder and concrete control. Altitude of gage is 710 ft above mean sea level (by barometer). Prior to Aug. 5, 1952, at site 600 ft upstream at different datum.

Extremes.--Maximum discharge during year, 387 cfs Jan. 19; minimum daily, 2.3 cfs Nov. 23.
1951-53: Maximum discharge, 558 cfs Apr. 9, 1952, when gate in outlet tunnel of reservoir failed; minimum daily, 0.3 cfs Oct. 1, 2, 1951.

Remarks.--Records good except those for period of no gage-height record, which are fair. All records presented herein include flow in pipeline which diverts 600 ft above station for McMinnville city water supply. Flow regulated by Haskins Creek Reservoir, but during winter months reservoir is empty except when inflow exceeds the capacity of outlet tunnel.

Cooperation.--Gage heights for diversion furnished by city of McMinnville.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*3.0	3.2	3.5	a42	100	29	43	33	*20	8.0	3.9	4.2
2	2.9	3.4	3.7	a80	96	28	40	31	18	7.6	3.9	3.8
3	2.9	*2.7	3.7	a75	104	28	36	30	19	8.7	4.7	3.6
4	3.3	3.1	4.1	a56	102	27	35	26	19	5.7	3.6	3.4
5	3.3	3.3	5.1	a42	114	25	32	25	20	8.4	3.6	2.8
6	2.9	3.5	5.9	a36	104	24	30	23	21	5.4	3.4	3.9
7	2.9	3.3	7.1	a60	104	22	29	24	20	*6.8	4.0	3.9
8	2.9	3.1	5.2	187	92	21	28	26	18	6.5	4.2	2.9
9	2.9	3.1	3.6	*171	76	20	18	25	17	6.2	4.2	3.0
10	2.9	3.1	4.6	121	64	21	4.3	23	17	6.2	5.0	3.0
11	2.9	3.1	36	151	56	26	2.9	20	18	6.0	5.0	3.0
12	2.9	4.3	92	134	51	28	4.8	20	13	5.8	7.6	3.0
13	3.0	3.7	125	111	47	27	11	19	15	5.9	7.0	3.0
14	3.0	5.3	115	99	46	25	7.0	19	14	6.0	5.5	3.0
15	3.0	4.5	*103	95	47	26	*2.5	18	15	5.7	4.7	3.0
16	2.9	2.9	88	188	75	*85	2.5	16	9.4	6.6	3.2	3.0
17	2.9	3.1	51	201	87	68	2.6	16	12	6.2	3.9	3.0
18	4.5	7.5	13	*285	72	72	2.9	20	11	5.6	3.9	5.5
19	4.0	8.4	12	359	64	66	2.9	20	11	5.6	4.7	7.6
20	3.0	7.5	11	273	56	65	2.9	19	11	2.9	4.7	7.6
21	3.2	3.3	15	193	49	75	2.9	25	11	4.9	3.9	7.6
22	4.2	5.2	27	213	48	100	3.0	27	10	6.1	3.9	*7.6
23	3.5	2.3	20	*211	43	104	3.0	29	9.5	6.1	3.9	8.7
24	3.1	2.7	18	153	40	102	2.8	30	9.0	6.1	3.2	8.7
25	3.1	3.2	16	138	37	85	2.9	28	8.5	4.7	*2.9	8.7
26	2.9	3.9	15	121	35	75	3.3	27	9.5	3.9	3.3	8.7
27	3.3	3.2	15	113	33	62	3.9	26	9.0	3.9	3.2	8.7
28	3.1	2.8	a17	130	32	58	20	25	9.5	5.5	3.2	8.7
29	3.1	3.3	a38	132	-	49	34	22	9.0	5.5	5.4	7.5
30	3.1	3.3	a48	117	-	48	35	21	8.0	4.7	4.7	9.1
31	3.1	-	a42	110	-	47	-	20	-	3.9	4.2	-
Total	97.7	115.3	963.5	4,396	1,874	1,540	448.1	733	411.4	181.1	132.5	160.2
Mean	3.15	3.84	31.1	142	66.9	49.7	14.9	23.6	13.7	5.84	4.27	5.34
Ac-ft	194	229	1,910	8,720	3,720	3,050	889	1,450	816	359	263	318

Adjusted for change in contents in Haskins Creek Reservoir

Mean	1.97	3.38	24.7	142	66.9	49.7	27.4	23.6	13.6	5.72	4.39	3.26
Cfsm	0.277	0.476	3.48	20.0	9.42	7.00	3.86	3.32	1.92	0.806	0.618	0.459
In.	0.32	0.53	4.01	23.03	9.82	8.05	4.30	3.83	2.14	0.93	0.71	0.51
Ac-ft	121	201	1,520	8,720	3,720	3,050	1,630	1,450	809	352	270	194

Observed

Calendar year 1952: Max 353 Min 2.3 Mean 27.5 Ac-ft 19,950
Water year 1952-53: Max 359 Min 2.3 Mean 30.3 Ac-ft 21,920

Adjusted

Calendar year 1952: Mean 27.5 Cfsm 3.87 In. 52.66 Ac-ft 19,950
Water year 1952-53: Mean 30.4 Cfsm 4.28 In. 58.20 Ac-ft 22,040

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for North Yamhill River at Pike.

North Yamhill River at Pike, Oreg.

Location.--Lat 45°22'10", long. 123°15'15", in NW¼ sec. 25, T. 2 S., R. 5 W., on right bank 500 ft downstream from Turner Creek, 0.5 mile southeast of Pike, and 4 miles northwest of Yamhill.

Drainage area.--66.8 sq mi.

Records available.--October 1948 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 192.66 ft above mean sea level, datum of 1929 (Corps of Engineers benchmark). Prior to Aug. 21, 1950, at datum 1.02 ft higher.

Average discharge.--5 years, 264 cfs.

Extremes.--Maximum discharge during year, 3,190 cfs Jan. 18 (gage height, 7.13 ft); minimum, 6.0 cfs Oct. 7, 8.
1948-53: Maximum discharge, 6,280 cfs Feb. 10, 1949 (gage height, 9.98 ft); minimum, 6.0 cfs Sept. 21, 22, 23, Oct. 7, 8, 1952.

Remarks.--Records good. Occasional diurnal fluctuations caused by small dams upstream; no seasonal regulation. Water supply for city of McMinnville is diverted from Haskins Creek above station and water supply for city of Yamhill is diverted from Turner Creek above station. Small diversions above station for irrigation.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 16 to May 19)

Oct. 1 to May 19				May 20 to Sept. 30			
0.7	5.6	2.2	134	1.0	6.4	2.1	91
.9	10	2.8	275	1.2	14	2.5	166
1.1	18	3.5	535	1.4	24	3.0	320
1.4	36	4.5	1,070	1.7	46		
1.8	74	6.5	2,580				

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.2	18	19	368	770	216	299	237	*137	57	16	19
2	6.8	12	31	670	786	202	278	221	127	54	16	17
3	6.8	12	39	625	874	190	253	207	121	50	16	15
4	6.8	12	136	438	840	181	234	186	114	46	21	13
5	6.8	12	93	337	980	172	221	174	121	43	21	12
6	6.6	12	112	272	902	161	209	159	133	41	20	11
7	6.4	12	337	514	840	155	199	168	113	*37	21	12
8	6.4	12	242	1,520	715	151	186	186	106	35	20	14
9	6.8	11	188	2,080	590	145	174	174	98	34	19	12
10	7.4	12	331	857	490	151	145	159	96	33	16	11
11	7.4	18	284	1,340	418	170	140	149	87	32	14	11
12	7.4	22	*402	1,080	362	199	168	138	82	30	11	12
13	7.2	46	351	796	327	181	166	130	82	30	10	11
14	7.0	52	278	650	315	170	153	127	77	32	10	10
15	6.8	35	231	665	337	271	*138	120	73	32	9.3	9.3
16	6.8	20	192	1,460	619	*770	151	114	66	31	10	9.3
17	7.2	17	151	1,490	914	645	147	110	65	27	11	10
18	7.0	16	96	*2,270	735	675	138	142	65	24	9.6	10
19	7.4	24	90	2,350	580	635	132	135	66	24	8.9	13
20	8.7	17	79	2,090	499	600	127	131	67	23	8.2	14
21	9.2	14	99	1,530	434	735	121	178	65	23	8.6	14
22	9.8	13	197	1,690	387	950	123	205	65	22	8.6	*15
23	11	13	164	*1,460	340	879	121	241	63	21	9.3	19
24	13	13	134	1,090	311	813	111	254	62	20	21	19
25	12	13	118	1,130	284	715	110	241	62	20	27	18
26	11	13	106	1,080	261	576	138	247	60	22	*46	17
27	10	12	105	998	247	486	368	222	59	20	28	18
28	9.8	12	124	1,120	229	450	281	197	70	19	27	28
29	10	13	309	1,060	-	380	267	176	70	18	34	22
30	*12	15	422	896	-	362	264	161	63	17	24	45
31	14	-	351	852	-	331	-	148	-	16	20	-
Total	262.7	523	5,811	34,778	15,386	12,717	5,562	5,437	2,535	933	541.5	460.6
Mean	8.47	17.4	187	1,122	550	410	185	175	84.5	30.1	17.5	15.4
Cfsm	0.127	0.260	2.80	16.8	8.23	6.14	2.77	2.62	1.26	0.451	0.262	0.231
In.	0.15	0.29	3.24	19.36	8.57	7.08	3.10	3.03	1.41	0.52	0.30	0.26
Ac-ft	521	1,040	11,530	68,980	30,520	25,220	11,030	10,780	5,030	1,850	1,070	914

Calendar year 1952: Max 2,190 Min 6.4 Mean 163 Cfsm 2.44 In. 33.28 Ac-ft 118,500
Water year 1952-53: Max 2,350 Min 6.4 Mean 233 Cfsm 3.49 In. 47.31 Ac-ft 168,500

Peak discharge (base, 2,500 cfs).--Jan. 18 (1:30 p.m.) 3,190 cfs (7.13 ft).
* Discharge measurement made on this day.

Willamette River at Wilsonville, Oreg.

Location.--Lat 45°17'30", long. 122°46'30", in SW¼ sec. 23, T. 3 S., R. 1 W., on right bank 1 mile downstream from Corral Creek and 3 miles upstream from Molalla River at Boones Ferry, town of Wilsonville.

Drainage area.--8,400 sq mi, approximately.

Records available.--October 1948 to September 1953.

Average discharge.--5 years, 30,640 cfs.

Gage.--Staff gage read twice daily. Datum of gage is at mean sea level, datum of 1929. Supplementary staff gage at Butteville 4 miles upstream, datum of which is 50 ft above mean sea level, datum of 1929. Records for the entire period of record obtained from gage at Butteville.

Extremes.--Maximum discharge during year, 248,000 cfs Jan. 21 (elevation at Butteville, 90.00 ft; elevation at Wilsonville, 87.8 ft); minimum daily, 3,600 cfs Nov. 29, 30 (computed from records for stations at Salem and South Yamhill near Whiteson).
1948-53: Maximum discharge, that of Jan. 21, 1953; minimum daily, that of Nov. 29, 30, 1952.
Maximum stage known, about 105 ft at Wilsonville, Dec. 4, 1861.

Remarks.--Records excellent except those for periods of shifting control, which are good, and those for periods of backwater from stoplogs, gates, and locks at dam, which are fair. Flow regulated at times by Cottage Grove, Fern Ridge, Dorena, and Detroit Reservoirs. Many small diversions for irrigation above station.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,000	4,000	3,800	25,000	84,900	24,500	36,200	31,400	33,500	13,100	6,000	7,000
2	5,000	4,000	* 4,000	26,000	85,200	24,000	31,900	30,300	30,100	12,700	6,000	7,000
3	5,000	4,000	5,000	38,000	88,200	22,800	28,800	32,100	27,800	12,400	6,000	6,500
4	5,000	4,000	8,000	48,000	99,900	21,100	26,500	28,300	26,200	12,000	6,000	6,500
5	5,000	4,000	10,000	42,000	116,000	19,900	24,800	26,100	24,500	12,000	6,000	6,500
6	4,800	3,800	12,000	32,000	*128,000	18,600	23,500	25,600	23,400	11,500	6,500	6,500
7	4,800	3,800	15,000	28,000	138,000	18,100	22,900	*26,700	25,700	12,000	7,000	6,000
8	4,800	3,800	20,000	*30,000	136,000	17,000	22,500	27,500	30,500	12,000	7,000	6,000
9	4,800	3,800	27,000	56,400	132,000	17,000	21,600	29,200	40,500	12,000	6,500	6,500
10	4,800	3,800	26,000	84,000	124,000	17,800	20,100	29,100	41,000	11,000	6,000	6,000
11	4,800	3,800	31,000	97,100	107,000	18,700	18,900	29,000	41,300	11,000	6,000	6,000
12	4,800	3,800	39,000	104,000	86,500	20,100	17,900	26,600	32,800	10,000	6,000	6,000
13	4,800	4,200	44,000	*101,000	63,200	22,500	17,600	24,800	30,500	10,000	6,000	6,000
14	4,800	4,800	36,000	101,000	53,000	23,600	18,000	23,100	29,000	10,000	6,000	6,000
15	4,800	6,000	30,000	104,000	47,600	22,300	18,400	21,600	26,600	9,500	5,500	6,000
16	4,600	6,500	24,000	105,000	45,200	24,300	18,300	21,200	24,800	9,500	5,500	6,000
17	4,600	6,000	20,000	104,000	56,900	38,300	18,100	20,900	23,000	9,000	6,000	6,000
18	4,400	5,000	*16,000	120,000	85,200	44,100	19,000	20,000	*21,100	8,500	5,500	6,000
19	4,400	4,600	15,000	150,000	92,100	43,900	19,300	20,600	20,200	8,000	5,500	6,000
20	4,200	4,400	13,000	195,000	91,800	*42,800	19,800	28,300	20,000	8,000	5,500	6,000
21	4,200	4,200	12,000	*238,000	70,100	46,000	20,800	35,400	19,800	8,000	5,500	6,000
22	4,200	4,000	12,000	236,000	54,200	53,900	21,800	39,000	18,300	8,000	5,500	6,000
23	4,200	4,000	14,000	200,000	45,400	65,900	22,900	40,200	17,200	7,500	5,500	6,000
24	4,200	3,800	15,000	166,000	38,200	72,100	24,300	40,100	16,500	7,500	5,500	6,000
25	4,200	3,800	16,000	133,000	33,200	73,500	24,400	42,700	15,700	7,500	6,000	6,000
26	4,400	3,800	14,000	110,000	29,900	71,400	23,500	42,900	15,000	7,000	5,500	6,000
27	4,200	3,800	12,000	104,000	26,800	64,700	23,500	42,400	14,500	6,500	8,500	6,000
28	4,000	3,800	11,000	99,600	25,400	54,800	28,600	48,400	14,400	6,500	8,500	6,500
29	4,000	3,600	11,000	90,300	-	46,200	34,800	48,900	13,800	6,500	8,000	6,500
30	4,200	3,600	14,000	83,600	-	40,100	33,400	44,100	*13,400	6,500	8,000	7,000
31	4,000	-	22,000	81,500	-	37,000	-	38,500	-	6,000	7,000	-
Total	141,000	126,500	551,800	‡3,132.5	‡2,183.9	‡1,127	702,100	985,000	731,100	291,700	194,000	186,000
Mean	4,548	4,217	17,800	101,000	78,000	36,350	23,400	31,770	24,370	9,410	6,258	6,217
Cfsm	-	-	-	-	-	-	-	-	-	-	-	-
In.	-	-	-	-	-	-	-	-	-	-	-	-
Ac-ft	279,700	250,900	‡1,094	‡6,213	‡4,332	‡2,235	‡1,393	‡1,954	‡1,450	578,600	384,800	369,900

Calendar year 1952: Max 145,000 Min 3,600 Mean 21,520 Cfsm 2.56 In. 34.87 Ac-ft 15,620,000
Water year 1952-53: Max 238,000 Min 3,600 Mean 28,360 Cfsm 3.38 In. 45.87 Ac-ft 20,530,000

* Discharge measurement made on this day.
‡ Expressed in thousands.
Note.--Backwater from stoplogs, gates and locks at Oregon City Oct. 1 to Jan. 8, July 4 to Sept. 30; discharge computed on basis of records for station at Salem and represents flow into the gage pool which, because of pondage, may not represent flow passing gage. Shifting-control method used May 5-7, 12-19, June 4-7, June 15 to July 3.

Molalla River above Pine Creek, near Wilhoit, Oreg.

Location.--Lat 45°00'30", long. 122°29'00", near line between secs. 30 and 31, T. 6 S., R. 3 E., on right bank 1,700 ft upstream from Pine Creek and 5 miles southeast of Wilhoit.

Drainage area.--96 sq mi, approximately.

Records available.--October 1935 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 780 ft (by barometer). Prior to Sept. 30, 1945, water-stage recorder at present site at datum 2.02 ft higher.

Average discharge.--18 years, 518 cfs.

Extremes.--Maximum discharge during year, 9,520 cfs Jan. 9 (gage height, 14.92 ft), from rating curve extended above 5,500 cfs by logarithmic plotting; minimum, 25 cfs Nov. 28. 1935-53: Maximum discharge, 12,200 cfs Jan. 7, 1948 (gage height, 13.17 ft), from rating curve extended above 4,800 cfs on basis of shape of previous curve defined to 7,000 cfs; maximum gage height, that of Jan. 9, 1953; minimum discharge, 19 cfs Aug. 30 to Sept. 2, 1940.

Remarks.--Records good. No diversion or regulation above station.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Apr. 27		Apr. 28 to Sept. 30	
3.1	24	5.0	635	4.6	190	3.8	39
3.4	50	7.0	2,150	5.0	365	4.0	72
3.7	87	10.0	4,650	6.0	1,080	4.2	128
4.1	160	14.0	8,550	8.0	2,700	4.5	250
4.4	265			12.0	6,500	5.0	530
						6.1	1,150

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	41	50	509	2,240	261	417	705	535	197	61	82
2	29	36	100	*1,540	1,700	257	365	640	486	189	59	74
3	29	32	117	1,600	3,690	257	343	600	439	185	59	70
4	29	30	304	993	2,520	237	338	*635	403	177	59	66
5	28	29	345	737	2,120	229	348	720	385	161	61	62
6	28	28	276	607	2,430	222	343	730	492	158	86	59
7	28	28	691	729	2,360	225	310	700	1,070	150	70	59
8	28	27	430	2,590	1,960	301	274	635	1,070	146	62	57
9	28	26	300	6,330	*1,340	372	253	565	846	143	59	*57
10	28	28	1,160	2,630	996	398	233	519	758	125	57	57
11	28	42	1,410	2,710	776	490	233	469	665	118	53	55
12	28	61	1,950	3,990	598	539	249	439	605	112	52	53
13	28	126	1,090	3,660	475	424	261	433	540	109	50	53
14	28	131	691	2,380	404	354	253	457	486	109	49	52
15	*26	96	516	1,860	354	458	241	451	439	102	49	50
16	26	60	411	3,670	670	1,060	274	409	397	96	49	49
17	26	49	327	5,600	2,030	908	365	379	*367	94	47	47
18	26	43	270	8,040	1,180	739	378	494	344	91	47	47
19	27	40	231	*5,810	853	675	475	812	338	86	46	47
20	28	39	201	4,970	*658	616	675	752	333	84	47	46
21	29	38	194	3,120	522	582	731	758	300	82	49	45
22	29	36	244	2,200	430	1,110	723	746	275	77	46	45
23	29	34	231	2,010	354	1,420	776	705	260	77	46	45
24	36	34	190	1,400	316	1,450	675	690	241	72	53	45
25	34	*33	168	1,560	288	1,300	632	640	228	70	59	43
26	30	33	156	1,480	270	984	715	630	218	68	170	42
27	29	32	150	1,130	265	776	1,170	936	214	68	218	43
28	28	31	152	1,030	283	691	1,120	840	210	66	143	62
29	28	30	475	1,330	-	564	852	736	210	*64	146	66
30	32	30	873	1,540	-	*530	774	670	214	64	112	84
31	37	-	628	2,050	-	505	-	595	-	62	94	-
Total	897	1,323	14,331	79,805	32,082	18,934	14,796	19,490	13,368	3,402	2,258	1,662
Mean	28.9	44.1	462	2,574	1,146	611	493	629	446	110	72.8	55.4
Cfsm	0.301	0.459	4.81	26.8	11.9	6.36	5.14	6.55	4.65	1.15	0.758	0.577
In.	0.35	0.51	5.55	30.92	12.43	7.33	5.73	7.55	5.18	1.32	0.87	0.64
Ac-ft	1,780	2,620	28,430	158,300	63,630	37,560	29,350	38,660	26,520	6,750	4,480	3,300

Calendar year 1952: Max 4,530 Min 26 Mean 417 Cfsm 4.34 In. 59.15 Ac-ft 302,900
Water year 1952-53: Max 8,040 Min 26 Mean 554 Cfsm 5.77 In. 78.38 Ac-ft 401,400

Peak discharge (base, 3,600 cfs).--Jan. 9 (4 a.m.) 9,520 cfs (14.92 ft); Jan. 12 (10 p.m.) 4,690 cfs (10.04 ft); Jan. 18 (2 p.m.) 9,470 cfs (14.88 ft); Feb. 3 (9 a.m.) 4,440 cfs (9.83 ft).

* Discharge measurement made on this day.

Molalla River near Canby, Oreg.

Location.--Lat 45°14'40", long. 122°41'10", in NE¼ sec. 9, T. 4 S., R. 1 E., on downstream side of center pier of bridge, 1½ miles downstream from Milk Creek and 1½ miles south of Canby.

Drainage area.--323 sq mi.

Records available.--August 1928 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 105.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 24, 1933, staff gage at same site and datum.

Average discharge.--25 years, 1,090 cfs.

Extremes.--Maximum discharge during year, 21,000 cfs Jan. 18 (gage height, 12.50 ft); minimum daily, 50 cfs Oct. 7, 8.
1928-53: Maximum discharge, 25,100 cfs Jan. 7, 1948 (gage height, 14.9 ft); minimum, 25 cfs Sept. 14, 1938; minimum daily, 38 cfs Sept. 7, 1935, Aug. 18, 23, 1940.

Remarks--Records good except those for periods of no gage-height record or those below 100 cfs, which are fair. A few small diversions above station for irrigation.

Revisions (water years).--WSP 1248: 1929-30, 1932.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 12 to Jan. 8)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
0.1	43	3.0	1,340	0.1	78	5.0	3,460
.4	84	5.0	3,280	.5	170	7.0	6,200
.7	143	7.0	6,200	1.0	340	9.0	10,000
1.0	220	9.0	10,000	2.0	850	11.1	15,800
1.5	405	11.5	17,200	3.0	1,570		
2.0	655						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	100	100	1,140	4,730	1,050	1,660	1,480	1,460	461	a130	176
2	54	100	122	2,190	3,590	970	1,490	1,380	1,270	430	a125	165
3	54	91	183	2,720	6,290	904	1,370	1,270	1,120	407	a125	148
4	54	84	223	2,040	6,060	850	1,270	1,270	1,010	380	a125	a140
5	54	81	505	1,610	4,770	796	1,250	1,440	964	360	a130	a130
6	52	76	369	1,300	5,260	760	1,220	1,520	1,120	336	a140	a120
7	50	70	892	1,420	4,860	748	1,180	*1,470	2,310	320	203	a115
8	50	70	913	2,680	4,580	850	1,100	1,360	2,880	312	154	a115
9	52	67	590	11,300	3,420	998	1,030	1,220	2,420	293	a135	111
10	57	68	1,590	5,580	*2,710	1,080	991	1,090	2,300	276	a125	a105
11	60	81	1,840	4,350	2,260	1,210	977	977	1,950	265	a120	*100
12	57	106	3,020	6,150	1,880	1,400	1,060	910	1,710	248	a115	a96
13	*61	148	2,060	6,520	1,600	1,270	1,100	868	1,520	240	a105	a94
14	55	190	1,410	4,830	1,460	1,120	1,080	946	1,300	248	a105	a92
15	54	185	1,060	3,300	1,370	1,150	1,030	970	1,140	240	a105	92
16	54	141	854	4,370	1,450	1,960	1,050	928	1,030	215	a100	92
17	52	118	721	7,960	4,850	2,300	1,200	880	922	206	a100	90
18	52	104	606	16,600	3,870	2,010	1,220	874	*838	197	a100	90
19	54	98	545	*15,700	2,880	1,940	1,270	1,690	820	188	a100	90
20	54	97	480	11,900	2,340	1,960	1,500	1,960	892	185	a100	88
21	57	91	450	8,160	1,990	1,980	1,650	1,940	778	173	a105	88
22	62	81	585	5,010	1,720	2,910	1,620	1,910	712	167	a100	82
23	64	76	661	4,540	1,510	4,090	1,580	1,840	660	167	a100	84
24	62	*76	560	3,380	1,360	3,810	1,560	2,030	610	165	a110	82
25	89	71	480	3,650	1,240	4,330	1,450	1,910	570	162	a130	82
26	81	71	428	4,230	1,130	3,280	1,520	1,820	535	159	154	78
27	65	73	410	3,450	1,070	2,620	2,060	3,020	515	148	376	82
28	62	68	387	2,850	1,110	2,330	2,320	2,870	495	146	282	104
29	65	65	616	3,080	-	2,030	1,860	2,360	495	*143	272	203
30	73	62	1,570	3,220	-	1,890	1,660	2,000	500	a135	237	151
31	93	-	*1,390	3,600	-	*1,860	-	1,700	-	a130	197	-
Total	1,858	2,809	25,620	158,830	81,360	56,456	41,328	47,903	34,846	7,502	4,505	3,285
Mean	59.9	93.6	826	5,124	2,906	1,821	1,378	1,545	1,162	242	145	110
Cfsm	0.185	0.290	2.56	15.9	9.00	5.64	4.27	4.78	3.60	0.749	0.449	0.341
In.	0.21	0.32	2.95	18.29	9.37	6.50	4.76	5.52	4.01	0.86	0.52	0.38
Ac-ft	3,690	5,570	50,820	315,000	161,400	112,000	81,970	95,010	69,120	14,880	8,940	6,520

Calendar year 1952: Max 8,140 Min 50 Mean 850 Cfsm 2.63 In. 35.82 Ac-ft 617,100
Water year 1952-53: Max 16,600 Min 50 Mean 1,278 Cfsm 3.96 In. 53.69 Ac-ft 925,000

Peak discharge (base, 7,200 cfs).--Jan. 9 (11 a.m.) 15,700 cfs (11.07 ft); Jan. 18 (9 to 10 p.m.) 21,000 cfs (12.50 ft); Feb. 3 (4:30 p.m.) 8,540 cfs (8.31 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for station above Pine Creek near Wilhoit.

Note.--Discharge for Oct. 1-24, 26-30, Nov. 4-11, 22-30, Sept. 9, 11, 15-28, computed from wire-weight on staff-gage readings furnished by U. S. Weather Bureau.

Pudding River near Mount Angel, Oreg.

Location.--Lat 45°03'50", long. 122°49'45", in SE¼ sec. 8, T. 6 S., R. 1 W., on left bank on downstream side of Cline Bridge, 1½ miles west of Mount Angel and 4 miles upstream from Little Pudding River.

Drainage area.--204 sq mi.

Records available.--October 1939 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 119.76 ft above mean sea level, datum of 1929. Prior to Sept. 22, 1945, staff or wire-weight gages at same site and datum.

Average discharge.--13 years (1939-44, 1945-53), 698 cfs.

Extremes.--Maximum discharge during year, 10,500 cfs Jan. 19 (gage height, 29.80 ft); minimum, 13 cfs Oct. 5, 6, 7, 8.
1939-53: Maximum discharge, 15,000 cfs Feb. 17, 1949; maximum gage height, 30.38 ft Feb. 18, 1949; minimum discharge, 8 cfs Aug. 18, 22, 1951.

Remarks.--Records good except those for periods of backwater from debris, no gage-height record, or shifting control, which are fair. Small diversions for irrigation above station; no regulation.

Revisions (water years).--WSP 1094: 1943. WSP 1218: Drainage area. WSP 1248: 1943.

Rating table, water year 1952-53, except periods of shifting control or backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

0.4	13	16.0	2,360
1.0	41	22.0	4,100
2.0	107	26.0	5,800
4.0	313	29.0	8,600
8.0	925		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	50	a34	a950	a2,300	a600	1,170	628	792	204	36	65
2	17	51	a50	a1,200	a2,300	a650	1,040	611	701	189	36	63
3	17	40	a80	a1,300	a2,600	636	944	575	624	177	38	57
4	15	35	a140	a1,100	a2,800	593	857	*550	568	164	40	51
5	14	34	a250	a950	a2,900	548	803	538	526	153	50	44
6	14	32	a300	a900	a2,800	518	754	508	612	145	52	42
7	14	31	a550	a1,200	a2,700	490	722	536	830	131	44	40
8	14	31	a600	a1,900	a2,600	473	665	574	1,100	121	47	42
9	15	32	a500	a2,400	*2,420	464	618	536	1,000	114	43	*43
10	16	33	a850	a2,700	1,990	464	574	498	886	108	42	42
11	18	41	a1,100	a2,400	1,660	530	530	449	749	95	34	38
12	21	61	a1,300	a2,700	1,390	672	533	419	710	91	32	37
13	20	70	a1,000	a3,000	1,190	690	560	389	659	90	26	35
14	*19	84	a750	a2,900	1,040	635	546	424	572	90	23	33
15	19	98	a600	a2,500	990	614	498	443	510	89	23	32
16	19	66	a480	a2,700	1,150	1,100	484	425	458	83	24	30
17	17	46	a400	a3,200	2,780	1,600	536	395	*416	76	29	28
18	16	38	a340	a5,500	3,250	1,600	550	382	376	68	25	29
19	16	34	a320	a8,500	2,600	1,630	545	726	363	65	24	29
20	16	a32	a300	*7,250	2,130	1,630	558	758	380	63	24	28
21	19	a32	a320	5,730	1,820	1,700	558	798	339	59	25	27
22	21	a32	a360	4,700	1,540	2,070	548	888	309	57	29	28
23	23	a32	a340	3,990	1,340	2,510	575	900	283	55	29	30
24	29	a32	a320	3,210	1,150	2,410	552	916	264	53	35	36
25	38	*32	a300	3,080	a1,000	2,270	510	964	250	51	47	32
26	33	a30	a280	3,530	a900	2,210	518	1,000	240	52	70	30
27	29	a28	a280	3,440	a800	1,890	738	1,240	229	53	171	29
28	27	a26	a300	2,850	a750	1,700	754	1,360	223	47	118	40
29	27	a28	*470	2,670	-	1,520	641	1,220	238	*42	107	81
30	34	a30	830	2,500	-	*1,350	642	1,080	223	40	97	65
31	44	-	891	a2,400	-	1,340	-	913	-	36	75	-
Total	658	1,241	14,635	93,350	52,890	37,107	19,523	21,621	15,430	2,859	1,495	1,206
Mean	21.2	41.4	472	3,011	1,889	1,197	651	697	514	92.2	48.2	40.2
Cfsm	0.104	0.203	2.31	14.8	9.26	5.87	3.19	3.42	2.52	0.452	0.236	0.197
In.	0.12	0.23	2.67	17.02	9.64	6.76	3.56	3.94	2.81	0.52	0.27	0.22
Ac-ft	1,310	2,460	29,030	185,200	104,900	73,600	38,720	42,880	30,600	5,670	2,970	2,390

Calendar year 1952: Max 5,160 Min 14 Mean 514 Cfsm 2.52 In. 34.29 Ac-ft 373,000
Water year 1952-53: Max 8,500 Min 14 Mean 718 Cfsm 3.52 In. 47.76 Ac-ft 519,700

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of weather records, recorded range in stage when available, and records for station at Aurora.
Note.--Backwater from debris Nov. 11-19, 25. Shifting-control method used Aug. 3 to Sept. 30.

Pudding River at Aurora, Oreg.

Location.--Lat 45°14'00", long. 122°45'00", in SE¼ sec. 12, T. 4 S., R. 1 W., on upstream side of highway bridge at Aurora, half a mile upstream from Mill Creek.

Drainage area.--479 sq mi.

Records available.--October 1928 to September 1953.

Gage.--Wire-weight gage read twice daily October to June and once daily thereafter. Datum of gage is 77.23 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 2, 1934, staff gage at same site and datum. June 1 to Sept. 15, 1947, temporary staff gage 40 ft upstream at same datum.

Average discharge.--25 years, 1,174 cfs.

Extremes.--Maximum discharge during year, 15,600 cfs Jan. 20 (gage height, 22.12 ft); minimum, 53 cfs Oct. 8.

1928-53: Maximum discharge, 25,400 cfs Dec. 30, 1937 (gage height, 24.5 ft, from graph based on gage readings), from rating curve extended above 16,000 cfs; minimum, 37 cfs Sept. 9, 12, 1935.

Maximum stage known, 25.0 ft about Jan. 7, 1923 (discharge, 27,900 cfs, from rating curve extended above 16,000 cfs).

Remarks.--Records good. Small diversions above station. Slight regulation at times in summer by mills on tributaries.

Revisions (water years).--WSP 1094: 1923(M), 1931, 1934, 1936(M), 1938, 1943. WSP 1218: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.0	47	14.0	4,180
.8	126	18.0	6,750
2.0	300	20.0	9,200
4.0	710	22.0	15,200
8.0	1,850		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	93	94	1,400	4,730	1,350	2,300	1,090	1,410	418	84	150
2	55	102	108	1,500	4,650	1,250	2,010	1,040	1,230	385	76	140
3	55	106	141	2,180	4,630	1,160	1,780	1,000	1,120	349	82	140
4	55	99	198	2,290	5,160	1,070	1,610	*950	982	327	82	130
5	55	90	269	1,950	5,390	1,000	1,460	928	908	288	83	120
6	55	85	438	1,640	5,570	942	1,390	908	908	280	91	112
7	55	84	513	1,430	5,550	892	1,320	892	1,090	261	100	103
8	53	80	908	2,060	5,380	850	1,250	938	1,570	242	93	98
9	55	79	978	3,430	5,100	822	1,140	942	1,750	218	93	95
10	55	82	898	4,700	*4,610	825	1,070	865	1,610	205	89	96
11	55	86	1,540	4,900	4,040	862	998	802	1,410	194	83	93
12	59	94	1,920	4,910	3,320	1,030	962	745	1,230	177	76	89
13	60	104	2,220	5,140	2,630	1,150	988	692	1,170	169	68	89
14	*61	141	1,780	5,430	2,130	1,120	988	678	1,060	165	62	85
15	60	172	1,310	5,390	1,850	1,050	948	738	938	158	59	*78
16	64	185	1,020	5,040	1,780	1,280	895	762	845	159	59	73
17	62	169	850	5,360	2,820	2,690	900	728	*762	152	60	68
18	64	136	730	6,470	4,740	2,950	962	688	695	139	61	67
19	60	118	640	11,500	5,310	2,860	962	828	642	134	60	64
20	60	110	588	*14,800	4,930	2,830	962	1,200	648	128	58	64
21	62	102	551	*14,200	4,350	2,890	972	1,260	658	124	57	64
22	64	98	567	9,540	3,740	3,090	972	1,380	598	116	58	62
23	65	94	685	7,880	3,150	3,660	968	1,480	547	108	59	63
24	76	*92	672	6,960	2,510	3,910	998	1,560	511	105	70	67
25	75	92	588	6,490	2,020	4,200	948	1,710	472	102	84	70
26	82	90	549	6,820	1,730	4,490	895	1,690	455	98	117	67
27	86	88	519	7,040	1,560	4,110	1,020	1,800	438	100	172	70
28	80	88	507	6,370	1,420	3,640	1,350	2,290	422	100	281	78
29	76	83	531	5,760	-	3,230	1,250	2,190	418	*98	220	95
30	78	87	872	5,330	-	2,690	1,110	1,900	430	91	201	167
31	80	-	*1,390	4,940	-	*2,500	-	1,630	-	90	183	-
Total	1,979	3,129	24,574	172,850	104,800	66,393	35,378	36,304	26,927	5,678	3,021	2,757
Mean	63.8	104	793	5,576	3,743	2,142	1,179	1,171	898	183	97.5	91.9
Cfsm	0.133	0.217	1.66	11.6	7.81	4.47	2.46	2.44	1.87	0.382	0.204	0.192
In.	0.15	0.24	1.91	13.42	8.14	5.15	2.75	2.82	2.09	0.44	0.23	0.21
Ac-ft	3,930	6,210	48,740	342,800	207,900	131,700	70,170	72,010	53,410	11,260	5,990	5,470

Calendar year 1952: Max 7,180 Min 53 Mean 921 Cfsm 1.92 In. 26.17 Ac-ft 668,800
Water year 1952-53: Max 14,800 Min 53 Mean 1,325 Cfsm 2.77 In. 37.55 Ac-ft 959,600

* Discharge measurement made on this day.

Tualatin River at Gaston, Oreg.

Location.--Lat 45°26'15", long. 123°10'05", in W½ sec. 34, T. 1 S., R. 4 W., on right bank 1.5 miles west of Gaston.

Drainage area.--51 sq mi, approximately, at measuring section at Gaston.

Records available.--October 1940 to September 1953.

Gage.--Staff gage read twice daily. Altitude of gage is 175 ft (by barometer). Prior to May 20, 1942, water-stage recorder at site 1.5 miles downstream at datum 164.18 ft above mean sea level, datum of 1929. May 20, 1942, to Aug. 24, 1949, staff gage at present site at datum 1.00 ft higher.

Average discharge.--13 years, 192 cfs.

Extremes.--Maximum discharge during year, 2,260 cfs Jan. 23 (gage height, 10.8 ft, from graph based on gage readings); minimum, 0.2 cfs Oct. 8.
1940-53: Maximum discharge, 4,820 cfs Feb. 17, 1949 (gage height, 12.23 ft, present datum); maximum gage height, 13.88 ft Dec. 19, 1941, site and datum then in use; minimum discharge, 0.2 cfs Sept. 22, 23, 1951, Aug. 14, 15, Sept. 25, Oct. 8, 1952.

Remarks.--Records good. Slight diurnal fluctuation caused by log ponds upstream. Small diversions above station for irrigation. In 1949 city of Hillsboro began diverting about 5 cfs for municipal supply. Some water is diverted from Roaring Creek, upstream, for Forest Grove municipal supply.

Revisions.--WSP 1044: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from debris Oct. 1 to Dec. 6)

0.32	0.2	2.5	198
.4	.8	3.0	316
.5	2.1	4.0	514
.6	4.2	6.0	774
.8	12	8.0	1,100
1.2	32	9.0	1,330
1.6	64	10.1	1,750
2.0	111		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.8	10	6.2	352	740	172	254	186	106	37	11	14
2	.6	7.3	9.2	618	613	158	222	170	99	35	11	13
3	.6	4.5	49	661	663	147	207	158	94	34	12	12
4	.4	3.8	196	442	692	138	190	142	88	32	12	9.6
5	.4	3.8	118	326	696	131	178	131	85	30	12	8.8
6	.3	3.8	97	270	685	124	166	122	85	28	14	8.4
7	.3	3.2	278	438	603	124	166	124	86	26	14	8.8
8	.2	2.9	297	953	548	125	168	132	82	24	14	9.6
9	.4	3.2	153	1,280	468	114	154	125	78	24	14	8.4
10	.6	*2.9	345	940	397	111	138	115	76	24	12	8.0
11	.7	3.8	311	1,030	340	119	144	108	70	22	10	7.6
12	1.1	14	470	1,060	297	147	154	101	*67	22	7.6	7.3
13	1.2	30	369	753	261	142	147	94	66	24	8.0	8.0
14	1.4	37	202	637	244	132	140	92	63	25	6.2	6.6
15	1.7	42	151	649	246	184	134	86	59	24	6.2	5.9
16	1.7	16	112	1,010	352	468	134	82	55	24	6.2	5.2
17	1.7	10	92	1,160	649	448	138	77	52	21	8.0	4.9
18	1.4	6.9	*78	1,200	528	414	132	84	49	18	8.8	4.9
19	1.3	4.5	72	1,740	430	*401	122	106	46	18	7.3	4.9
20	1.3	3.8	65	1,280	378	383	117	95	47	18	6.6	5.6
21	1.8	3.4	81	1,210	333	466	111	134	44	*18	6.2	5.6
22	3.2	3.4	160	1,060	297	657	107	178	44	15	6.2	6.2
23	4.0	3.4	160	1,430	270	718	106	182	44	15	6.2	7.3
24	4.5	3.4	125	932	246	578	93	188	43	16	11	8.8
25	5.2	3.4	99	841	222	542	98	188	42	15	31	8.0
26	5.9	3.4	90	882	205	434	182	176	40	16	39	8.4
27	5.2	3.6	93	702	192	388	302	174	40	15	29	10
28	4.5	4.9	98	740	186	364	*263	153	42	14	28	11
29	4.0	6.2	237	*945	-	330	222	137	44	14	34	14
30	4.5	6.2	410	789	-	300	202	125	43	13	22	22
31	6.9	-	338	666	-	282	-	114	-	12	*16	-
Total	67.8	254.7	5,361.4	26,996	11,781	9,241	4,891	4,079	1,879	673	429.5	262.8
Mean	2.19	8.49	173	871	421	298	163	132	62.6	21.7	13.9	8.76
Cfsm	0.043	0.166	3.39	17.1	8.25	5.84	3.20	2.59	1.23	0.425	0.272	0.172
In.	0.05	0.19	3.91	19.69	8.59	6.74	3.57	2.97	1.37	0.49	0.31	0.19
Ac-ft	134	505	10,630	53,550	23,370	18,330	9,700	8,090	3,730	1,330	852	521

Calendar year 1952: Max 2,120 Min 0.2 Mean 130 Cfsm 2.55 In. 34.75 Ac-ft 94,450
Water year 1952-53: Max 1,740 Min 0.2 Mean 181 Cfsm 3.55 In. 48.07 Ac-ft 130,700

Peak discharge (base, 2,000 cfs).--Jan. 23 (about 1 a.m.) 2,260 cfs (10.8 ft).
* Discharge measurement made on this day.

Scoggin Creek near Gaston, Oreg.

Location.--Lat 45°27'30", long. 123°09'15", in NW¼ sec. 26, T. 1 S., R. 4 W., on left bank 100 ft upstream from highway bridge, 1½ miles upstream from mouth, and 1.7 miles northwest of Gaston.

Drainage area.--44.0 sq mi.

Records available.--October 1940 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 168.92 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1947, water-stage recorder at site 300 ft upstream at same datum. Oct. 1, 1947, to June 7, 1950, staff gage at site 150 ft upstream at same datum.

Average discharge.--13 years, 135 cfs.

Extremes.--Maximum discharge during year, 1,370 cfs Jan. 23 (gage height, 11.80 ft); minimum, 1.6 cfs Oct. 15.
1940-53: Maximum discharge, 3,460 cfs Feb. 17, 1949 (gage height, 15.53 ft); minimum, 1.2 cfs Aug. 22, 1941, Oct. 7, 8, 1943.

Remarks.--Records good except those for periods of backwater from debris and those below 10 cfs, which are fair. Small diversions by pumping above station for irrigation. Part of water supply (about 1 cfs) for Hillsboro is diverted from Sein Creek above station. Some diurnal fluctuation caused by log ponds above station.

Rating tables, water year 1952-53, except periods of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to July 20				July 21 to Sept. 30	
1.6	1.2	2.7	41	2.0	7.2
1.9	3.9	3.0	84	2.2	11
2.1	6.5	4.0	243	2.4	18
2.3	11	8.0	740	2.6	32
2.4	14	10.5	1,200		
2.5	21				

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.9	9.4	14	185	500	132	154	121	84	40	15	14
2	6.4	8.8	18	410	468	128	144	115	78	37	14	14
3	3.4	7.9	26	496	521	121	135	110	73	34	14	12
4	2.6	5.4	101	347	549	118	128	103	70	34	17	11
5	3.4	6.1	79	246	561	113	123	94	71	32	18	11
6	4.1	7.6	64	177	570	108	118	89	78	26	18	11
7	4.5	7.6	171	252	509	104	116	91	70	22	18	13
8	4.4	7.6	174	698	426	101	110	92	64	22	16	12
9	5.2	7.8	113	1,040	358	96	106	84	60	22	16	10
10	5.5	*7.0	203	709	301	92	101	78	57	22	13	10
11	3.4	7.8	138	914	256	91	98	76	*57	23	13	10
12	6.7	10	218	839	216	94	103	71	55	22	12	12
13	5.9	19	180	596	180	94	98	70	57	22	12	11
14	2.6	28	123	481	162	94	96	67	54	26	12	9.4
15	1.9	26	98	416	157	94	92	65	53	25	9.7	9.2
16	3.1	14	81	787	206	266	92	62	49	23	10	9.7
17	5.8	12	65	910	366	284	98	60	44	20	11	9.4
18	5.7	10	*57	873	412	284	89	68	42	18	13	10
19	7.9	10	55	1,090	356	*293	86	74	44	22	13	9.4
20	7.6	9.2	50	1,090	304	262	82	64	42	*20	12	9.4
21	5.0	8.5	58	946	269	300	78	82	41	17	12	8.3
22	3.5	9.7	104	928	232	480	74	94	40	17	12	9.9
23	3.5	10	98	1,150	208	525	76	108	39	19	12	10
24	5.8	10	84	788	188	455	73	110	39	18	15	9.7
25	7.8	9.4	70	712	171	402	70	108	39	19	18	9.4
26	8.3	10	64	687	154	325	73	115	38	18	25	9.7
27	7.4	11	62	614	144	280	*200	138	39	16	19	13
28	4.9	10	65	663	137	257	164	123	42	18	17	12
29	5.7	11	135	742	-	209	138	111	49	18	22	12
30	7.0	12	256	*618	-	192	130	103	46	15	17	18
31	8.5	-	221	531	-	172	-	94	-	16	*14	-
Total	162.4	322.8	3,245	20,935	8,881	6,566	3,245	2,840	1,614	703	459.7	329.5
Mean	5.24	10.8	105	675	317	212	108	91.6	53.8	22.7	14.8	11.0
Cfsm	0.12	0.25	2.39	15.3	7.20	4.82	2.45	2.08	1.22	0.516	0.336	0.250
In.	0.14	0.27	2.74	17.69	7.51	5.55	2.74	2.40	1.36	0.59	0.39	0.28
Ac-ft	322	640	6,440	41,520	17,620	13,020	6,440	5,630	3,200	1,390	912	654

Calendar year 1952: Max 1,450 Min 1.9 Mean 103 Cfsm 2.34 In. 31.89 Ac-ft 74,840
Water year 1952-53: Max 1,150 Min 1.9 Mean 135 Cfsm 3.07 In. 41.66 Ac-ft 97,790

Peak discharge (base, 1,100 cfs).--Jan. 9 (1 a.m.) 1,160 cfs (10.28 ft); Jan. 20 (6 p.m.) 1,240 cfs (11.12 ft); Jan. 23 (2 a.m.) 1,370 cfs (11.80 ft).
* Discharge measurement made on this day.
Note.--Backwater from debris Oct. 6 to Dec. 3, Jan. 11 to Mar. 23, May 5 to July 18.

Tualatin River near Dilley, Oreg.

Location.--Lat 45°28'30", long. 123°07'25", in NW¼ sec. 24, T. 1 S., R. 4 W., on left bank, 5 ft upstream from highway bridge, 1 mile south of Dilley, and 1¼ miles downstream from Scoggin Creek.

Drainage area.--133 sq mi.

Records available.--October 1940 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 151.57 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 Prior to June 16, 1950, chain, wire-weight, or staff gages at several sites within 200 ft of present site at same datum.

Average discharge.--13 years, 390 cfs.

Extremes.--Maximum discharge during year, 3,560 cfs Jan. 23 (gage height, 12.60 ft); minimum, 0.7 cfs Oct. 15, 16.
1940-53: Maximum discharge, 9,460 cfs Feb. 17, 1949 (gage height, 13.89 ft, from graph based on gage readings); minimum, 0.4 cfs Sept. 5, 1951.

Remarks.--Records good except those below 10 cfs, which are fair. Diversions above station for municipal water supply and irrigation, chiefly in Wapato Lake area. Diurnal fluctuation caused by dam below Gaston.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Dec. 3, Jan. 2 to Feb. 10, Feb. 17-20, Mar. 16-19, 22-28, Aug. 25 to Sept. 30)

0.2	0.9	4.0	221
.3	1.9	8.0	590
.4	3.6	10.0	838
.5	5.7	10.5	980
.7	11	11.0	1,300
1.0	22	12.0	2,750
2.0	72	12.5	3,800

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.1	16	14	592	1,780	411	575	386	233	81	18	33
2	6.6	16	18	812	1,570	382	520	355	213	68	20	31
3	*5.1	12	48	1,250	1,660	359	476	336	200	65	21	27
4	2.6	6.2	276	1,010	1,780	333	440	307	191	64	24	24
5	2.4	5.7	284	765	1,790	316	413	283	183	62	32	23
6	4.0	7.4	181	616	1,850	302	386	260	226	56	32	21
7	4.0	8.8	419	622	1,720	284	371	260	199	47	30	23
8	5.1	10	524	1,280	1,470	274	347	281	179	43	26	25
9	5.1	11	353	*2,530	1,120	262	332	257	167	45	28	22
10	6.4	*12	552	2,280	928	262	312	238	158	42	24	19
11	3.8	9.6	516	2,220	807	268	291	224	*142	42	18	19
12	5.1	19	625	2,630	714	314	313	209	130	40	15	20
13	4.4	40	670	2,140	637	298	308	190	138	40	14	22
14	1.9	68	445	1,780	572	275	296	191	141	48	14	21
15	1.2	87	315	1,520	566	318	285	185	121	48	12	17
16	1.5	40	241	2,020	671	685	282	179	100	42	12	17
17	2.8	25	193	2,580	1,220	858	297	170	94	36	14	18
18	3.8	18	*164	2,600	1,450	809	273	185	94	29	15	18
19	5.7	16	148	3,220	1,120	*863	260	229	91	32	14	18
20	7.0	13	131	3,160	937	802	245	195	92	36	14	18
21	4.2	11	139	3,020	820	840	227	244	90	*32	13	18
22	3.4	12	282	2,510	743	1,190	222	314	88	25	13	16
23	3.8	12	310	3,220	674	1,650	232	349	85	32	15	18
24	6.2	11	249	2,460	611	1,460	216	351	82	29	25	18
25	11	11	207	2,190	556	1,370	204	357	81	32	48	12
26	12	11	186	2,170	506	1,060	227	345	80	26	64	12
27	11	11	177	2,030	468	883	470	397	81	28	58	14
28	7.0	14	174	2,020	438	816	*528	351	88	30	48	24
29	6.4	13	351	*2,200	-	741	440	319	105	30	58	33
30	9.0	13	615	2,040	-	676	414	289	95	25	45	34
31	12	-	666	1,840	-	634	-	260	-	23	*37	-
Total	169.6	559.7	9,473	61,327	29,178	19,995	10,202	8,496	3,967	1,278	821	635
Mean	5.47	18.7	306	1,978	1,042	645	340	274	132	41.2	26.5	21.2
Cfsm	0.041	0.141	2.30	14.9	7.83	4.85	2.56	2.06	0.992	0.310	0.199	0.159
In.	0.05	0.16	2.65	17.15	8.16	5.59	2.85	2.38	1.11	0.36	0.23	0.18
Ac-ft	336	1,110	18,790	121,600	57,870	39,660	20,240	16,850	7,870	2,530	1,630	1,260

Calendar year 1952: Max 3,730 Min 1.2 Mean 279 Cfsm 2.09 In. 28.51 Ac-ft 202,200
Water year 1952-53: Max 3,220 Min 1.2 Mean 400 Cfsm 3.01 In. 40.87 Ac-ft 289,700

Peak discharge (base, 4,000 cfs).--No peak above base.
* Discharge measurement made on this day.

Gales Creek near Forest Grove, Oreg.

Location.--Lat 45°33'20", long. 123°11'05", in E½ sec. 21, T. 1 N., R. 4 W., on left bank at upstream side of bridge, 2½ miles southeast of village of Gales Creek and 4½ miles northwest of Forest Grove.

Drainage area.--66 sq mi, approximately.

Records available.--October 1940 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 202.81 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Sept. 13, 1941, water-stage recorder at site 1.4 miles downstream at datum 15.33 ft lower. Sept. 13, 1941, to June 19, 1952, water-stage recorder at downstream side of bridge at datum 0.44 ft higher.

Average discharge.--13 years, 214 cfs.

Extremes.--Maximum discharge during year, 2,170 cfs Jan. 11 (gage height, 5.77 ft); minimum, 4.1 cfs Oct. 15 (gage height, 0.63 ft).
1940-53: Maximum discharge, 6,410 cfs Feb. 17, 1949 (gage height, 10.90 ft, from floodmark, site and datum then in use); minimum, 1 cfs Aug. 19, 1947.

Remarks.--Records good. Small diversions for irrigation above station. Some diurnal fluctuation at low flow caused by log ponds upstream.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.6	3.4	1.5	114
.7	7.8	2.0	250
.8	14	3.0	660
1.0	32	5.5	2,020
1.2	59		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.8	16	16	359	810	217	250	214	124	58	19	22
2	5.8	14	31	685	795	205	232	190	112	52	19	19
3	6.3	13	66	790	866	190	217	179	106	48	19	19
4	6.3	13	220	570	860	179	202	163	101	46	23	17
5	5.4	12	136	415	876	168	190	153	104	44	*24	16
6	6.3	12	148	338	800	160	185	143	110	41	22	16
7	4.9	12	355	534	735	156	174	143	101	38	24	17
8	5.4	12	306	1,420	620	153	168	148	91	36	22	19
9	6.8	12	247	1,740	529	146	163	136	91	36	20	16
10	6.8	*13	427	1,230	455	148	153	124	106	34	19	14
11	6.8	16	296	1,770	395	156	148	119	*89	32	18	15
12	6.8	22	352	1,560	341	166	163	112	88	34	16	15
13	5.8	50	299	1,090	306	148	156	108	84	34	16	16
14	5.4	53	214	910	288	143	146	104	77	35	15	18
15	4.9	41	163	879	320	206	138	101	70	32	15	15
16	5.4	24	133	1,450	511	511	146	97	67	32	17	14
17	6.3	19	110	1,500	720	459	140	97	65	29	18	14
18	6.3	16	*95	*1,520	645	*502	133	110	64	28	17	13
19	7.8	16	91	1,840	560	463	128	116	65	28	16	13
20	7.3	15	80	1,800	498	435	121	104	65	*28	19	13
21	8.9	13	101	1,480	435	498	116	136	62	26	11	12
22	10	13	171	1,490	399	665	114	156	59	25	13	12
23	11	13	156	1,530	355	705	114	174	58	25	16	14
24	12	13	136	1,170	320	660	108	168	56	24	24	14
25	11	13	119	1,170	292	560	106	153	55	23	28	14
26	11	11	108	1,170	264	467	126	168	56	27	41	14
27	11	13	106	1,140	244	411	*367	193	56	25	31	16
28	11	12	124	*1,190	229	375	302	171	64	22	31	22
29	11	13	278	1,150	-	324	244	153	75	22	36	20
30	16	13	447	942	-	302	235	143	67	20	25	45
31	18	-	395	876	-	274	-	133	-	20	*21	-
Total	253.5	528	5,926	35,708	14,468	10,152	5,185	4,409	2,388	1,004	655	504
Mean	8.18	17.6	191	1,152	517	327	173	142	79.6	32.4	21.1	16.8
Cfsm	0.124	0.267	2.89	17.4	7.83	4.95	2.62	2.15	1.21	0.491	0.320	0.255
In.	0.14	0.30	3.34	20.12	8.15	5.72	2.92	2.48	1.35	0.57	0.37	0.28
Ac-ft	503	1,050	11,750	70,830	28,700	20,140	10,280	8,750	4,740	1,990	1,300	1,000

Calendar year 1952: Max 2,280 Min 3.7 Mean 156 Cfsm 2.36 In. 32.12 Ac-ft 113,100
Water year 1952-53: Max 1,840 Min 4.9 Mean 222 Cfsm 3.36 In. 45.74 Ac-ft 161,000

Peak discharge (base, 1,100 cfs).--Jan. 8 (8:30 p.m.) 2,090 cfs (5.64 ft); Jan. 11 (4 p.m.) 2,170 cfs (5.77 ft); Jan. 16 (5 p.m.) 1,730 cfs (4.98 ft); Jan. 20 (12 p.m.) 2,050 cfs (5.56 ft).
* Discharge measurement made on this day.

McKay Creek near North Plains, Oreg.

Location.--Lat 45°37'35", long. 122°58'30", in SE¼ sec. 30, T. 2 N., R. 2 W., on downstream end of left timber bridge bent, about 1¾ miles upstream from Jackson Creek and 2½ miles northeast of North Plains.

Drainage area.--27.6 sq mi.

Records available.--October 1940 to September 1943, October 1948 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 172.57 ft above mean sea level, datum of 1929. October 1940 to September 1943 at datum 0.25 ft higher.

Average discharge.--8 years, 67.0 cfs.

Extremes.--Maximum discharge during year, 800 cfs Jan. 20 (gage height, 10.71 ft); minimum, 1.1 cfs Oct. 3.
1940-43, 1948-53: Maximum discharge, 2,100 cfs Feb. 17, 1949 (gage height, 11.23 ft); minimum, 0.4 cfs Aug. 17, 18, 22, 1951.

Remarks.--Records fair. Some diurnal fluctuation in summer caused by pumping for irrigation.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.0	3.5	6.2	60	231	54	95	72	28	12	2.5	4.2
2	1.7	3.1	9.2	92	235	50	88	66	25	11	2.6	3.8
3	1.6	3.0	12	121	255	46	81	64	23	10	3.0	3.6
4	1.7	2.8	24	104	284	41	71	59	21	9.7	4.0	2.9
5	1.7	2.8	18	78	288	37	64	55	22	9.1	4.3	2.7
6	1.7	2.8	19	60	272	35	60	52	26	8.1	4.2	2.3
7	1.7	2.6	46	80	248	33	57	52	38	7.7	4.5	2.4
8	1.8	2.6	45	196	209	31	60	46	32	7.5	3.8	3.4
9	2.1	2.7	34	407	166	31	59	42	28	7.1	4.0	3.0
10	2.2	*2.9	67	279	136	31	56	37	26	6.7	3.4	2.3
11	2.2	4.4	48	346	106	a32	57	33	*24	6.4	2.2	2.1
12	2.0	5.3	34	428	85	a40	58	32	37	6.1	2.0	2.9
13	2.1	8.7	26	323	73	a40	58	30	34	6.4	1.9	2.7
14	1.9	9.3	21	244	66	a50	55	29	30	6.8	1.8	2.1
15	1.5	9.6	17	186	64	a100	52	27	27	6.4	2.1	2.5
16	1.8	6.5	15	327	84	a200	56	26	25	5.7	2.6	2.2
17	1.9	5.5	13	554	194	a190	56	25	22	5.3	2.8	2.1
18	2.0	5.4	*12	*560	241	a180	49	29	20	4.6	2.4	1.7
19	2.0	4.9	11	682	206	*165	49	33	19	4.9	2.6	2.1
20	2.2	4.8	10	669	177	154	46	27	18	*5.3	2.6	2.0
21	2.5	4.9	13	604	149	147	43	36	17	4.1	2.8	1.5
22	2.6	5.2	26	414	126	168	43	41	16	3.9	2.4	1.7
23	3.0	5.4	32	431	106	222	43	48	15	3.8	1.9	2.3
24	3.8	5.8	29	365	92	225	38	57	14	3.9	3.6	2.0
25	3.3	6.0	26	361	81	203	38	55	13	3.4	4.4	1.7
26	2.7	6.0	22	389	68	171	43	52	13	4.0	6.8	1.8
27	2.6	6.2	20	366	61	146	*57	48	13	3.7	6.9	1.8
28	2.3	6.0	19	330	57	142	59	43	13	3.6	6.5	2.7
29	2.8	6.0	36	*297	-	122	72	40	15	3.0	7.0	3.0
30	3.9	6.0	62	261	-	117	76	35	15	3.0	5.2	5.0
31	4.1	-	62	233	-	102	-	31	-	3.5	*4.3	-
Total	71.4	150.7	834.4	9,847	4,360	3,305	1,739	1,322	669	186.7	111.1	76.5
Mean	2.30	5.02	26.9	318	156	107	58.0	42.6	22.3	6.02	3.58	2.55
Cfsm	0.083	0.182	0.975	11.5	5.65	3.88	2.10	1.54	0.808	0.218	0.130	0.092
In.	0.10	0.20	1.12	13.27	5.87	4.45	2.34	1.78	0.90	0.25	0.15	0.10
Ac-ft	142	299	1,660	19,530	8,650	6,560	3,450	2,620	1,330	370	220	152

Calendar year 1952: Max 689 Min 1.1 Mean 43.4 Cfsm 1.57 In. 21.41 Ac-ft 31,520
Water year 1952-53: Max 682 Min 1.5 Mean 62.1 Cfsm 2.25 In. 30.53 Ac-ft 44,980

Peak discharge (base, 600 cfs).--Jan. 20 (7:30 p.m.) 800 cfs (10.71 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Tualatin River at Gaston and Gales Creek near Forest Grove.

Tualatin River at Farmington, Oreg.

Location.--Lat 45°27'00", long. 122°57'00", in SE¼ sec. 29, T. 1 S., R. 2 W., on left bank attached to timber bents at upstream side of highway bridge at Farmington, 5½ miles southeast of Hillsboro.

Drainage area.--568 sq mi.

Records available.--October 1939 to September 1953.

Gage.--Staff-gage read twice daily. Datum of gage is 100.42 ft above mean sea level, datum of 1929. Prior to Oct. 1, 1940, at datum 2.00 ft higher. Auxiliary staff gage read twice daily at highway bridge 6½ miles downstream.

Average discharge.--14 years, 1,308 cfs.

Extremes.--Maximum discharge during year, 11,900 cfs Jan. 21 (gage height, 33.30 ft); minimum, 21 cfs Oct. 6-10.

1939-53: Maximum discharge, 17,400 cfs Feb. 18, 1949; maximum gage height, 34.5 ft Feb. 18, 1949, from graph based on gage readings; minimum discharge, 6.8 cfs Aug. 26, 1951.

Maximum stage known, about 37 ft at Farmington and 33.4 ft at gage near Scholls, Dec. 22 or 23, 1933.

Remarks.--Records good. Slight regulation by log ponds and dam below Gaston have little effect at this station; considerable pondage between this station and station near Willamette. Some diversions by pumping for irrigation above station, chiefly at Wapato Lake, near Gaston.

Revisions (water years).--WSP 1248: 1941.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 27 to Jan. 20, Aug. 20 to Sept. 30)

2.6	19	12.0	1,320
3.0	37	18.0	2,520
3.5	73	22.0	3,850
5.0	223	30.0	8,470
8.0	622	32.5	11,600

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	67	96	1,450	6,440	1,580	2,410	1,280	646	310	55	*114
2	25	80	97	1,750	6,110	1,430	2,240	1,240	577	300	49	96
3	*25	84	127	2,270	5,950	1,300	2,010	1,140	556	270	43	82
4	23	82	177	2,530	5,810	1,200	1,720	1,030	530	241	47	71
5	25	75	411	2,710	5,910	1,120	1,360	940	516	223	54	49
6	21	70	608	2,540	5,850	1,020	1,340	889	512	209	62	42
7	21	67	802	2,440	5,640	966	1,210	821	598	177	65	38
8	21	69	932	2,800	5,470	966	1,150	787	589	157	65	43
9	21	77	1,120	*2,930	5,280	916	1,140	787	516	147	65	43
10	21	75	1,140	3,510	4,990	852	1,130	753	505	135	67	40
11	24	79	1,240	4,310	4,840	838	1,080	654	498	125	71	40
12	26	82	1,220	5,320	4,630	852	1,040	616	*472	118	55	38
13	29	91	1,160	6,530	3,600	889	997	589	477	118	46	37
14	28	125	1,100	6,930	3,100	872	971	550	467	118	31	37
15	34	184	966	6,440	2,880	872	933	544	454	118	25	39
16	30	179	770	5,830	2,900	909	904	516	412	120	25	37
17	28	*167	553	5,870	3,070	1,520	896	505	370	113	26	34
18	27	138	483	7,010	3,240	1,980	920	526	347	102	28	33
19	28	121	*444	8,860	3,420	2,410	886	550	334	91	30	32
20	30	114	392	10,600	3,550	*2,570	835	580	334	91	30	32
21	34	112	324	*11,500	3,530	2,690	770	607	334	*89	27	34
22	39	100	347	10,900	3,340	2,830	722	673	331	80	27	35
23	40	91	422	10,100	3,240	2,970	733	804	317	73	27	36
24	45	86	509	10,000	3,050	3,100	689	875	305	69	28	32
25	47	86	550	9,540	2,970	3,240	654	903	278	66	40	32
26	56	86	559	8,690	2,780	3,350	676	886	269	65	97	32
27	64	86	491	8,240	2,510	3,350	812	875	260	68	127	34
28	65	86	483	7,680	2,050	3,400	*1,210	909	271	72	159	35
29	61	84	584	7,120	-	3,200	1,360	858	289	69	152	42
30	60	82	1,060	7,000	-	3,040	1,330	778	305	65	145	63
31	59	-	1,250	6,630	-	2,760	-	696	-	57	129	-
Total	1,082	2,925	20,417	190,030	116,150	58,992	34,128	24,161	12,669	4,056	1,897	1,352
Mean	34.9	97.5	659	6,130	4,148	1,903	1,138	779	422	131	61.2	45.1
Cfsm	0.061	0.172	1.16	10.8	7.30	3.35	2.00	1.37	0.743	0.231	0.108	0.079
In.	0.07	0.19	1.34	12.44	7.60	3.86	2.23	1.58	0.83	0.27	0.12	0.09
Ac-ft	2,150	5,800	40,500	376,900	230,400	117,000	67,690	47,920	25,130	8,040	3,760	2,680

Calendar year 1952: Max 10,700 Min 7.1 Mean 944 Cfsm 1.66 In. 22.64 Ac-ft 685,600
Water year 1952-53: Max 11,500 Min 21 Mean 1,282 Cfsm 7.26 In. 30.64 Ac-ft 928,000

* Discharge measurement made on this day.

Tualatin River near Willamette, Oreg.

Location.--Lat 45°21'05", long. 122°40'35", in SW¼ sec. 34, T. 2 S., R. 1 E., on left bank 300 ft upstream from county bridge, 1 mile northwest of Willamette, and 1¾ miles above mouth.

Drainage area.--710 sq mi.

Records available.--July 1928 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 85.61 ft above mean sea level, datum of 1929 (levels by Corps of Engineers). Prior to June 12, 1941, staff gage at datum 1.02 ft higher.

Average discharge.--25 years, 1,433 cfs (including flow of Oswego Canal).

Extremes.--Maximum discharge during year, 11,900 cfs Jan. 23; minimum daily 38 cfs Oct. 7. 1928-53: Maximum discharge, 29,300 cfs Dec. 23, 1933; minimum daily, 20 cfs Aug. 8-10, 1952.

Remarks.--Records excellent except those for periods of backwater from debris and those below 50 cfs, which are good. All records herein include flow of Oswego Canal which diverts water 4½ miles above station for recreational use in Oswego Lake and development of power between outlet of that lake and Willamette River, to which water is returned. Several small diversions above station for irrigation. Some regulation in low-water season by flashboards on crest of diversion dam for Oswego Canal.

Revisions (water years).--WSP 1014: 1943. WSP 1184: 1947. WSP 1248: 1941.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40	91	119	1,510	7,340	1,960	3,100	1,520	872	406	69	*169
2	40	98	132	1,780	7,010	1,760	2,800	1,460	804	383	68	148
3	*40	111	158	2,040	6,720	1,600	2,420	1,360	748	338	65	128
4	41	96	199	2,250	6,400	1,480	2,080	1,260	700	298	62	114
5	40	102	316	2,380	6,290	1,360	1,860	*1,190	674	267	65	107
6	40	105	725	2,420	6,250	1,280	1,700	1,110	619	253	67	98
7	38	105	793	2,480	6,120	1,200	1,580	1,030	772	244	67	92
8	39	106	870	3,080	5,930	1,150	1,480	976	845	226	67	88
9	40	104	1,050	4,180	5,700	1,090	1,420	958	806	209	67	84
10	41	106	1,200	*4,200	5,420	1,080	1,380	930	732	196	66	81
11	41	118	1,200	4,420	5,060	1,040	1,320	890	675	182	66	79
12	41	129	1,290	5,020	4,630	1,070	1,240	833	*634	178	65	78
13	44	135	1,260	5,500	4,140	1,090	1,210	782	624	161	65	76
14	43	142	1,230	5,960	3,710	1,070	1,200	736	629	155	62	74
15	42	187	1,130	6,180	3,320	1,030	1,160	711	619	141	59	73
16	43	226	931	6,490	3,140	1,200	1,110	691	568	133	54	74
17	45	*246	714	6,700	3,380	1,720	1,100	675	512	134	53	72
18	46	207	562	7,130	3,850	2,290	1,100	671	369	136	53	69
19	49	168	*479	7,820	3,950	2,660	1,070	696	312	126	54	69
20	50	168	415	9,130	4,000	*2,830	1,010	754	373	117	53	68
21	52	133	378	*10,900	3,980	2,930	953	788	410	111	53	66
22	52	120	391	11,700	3,880	3,120	918	810	410	113	52	65
23	54	113	463	11,700	3,710	3,470	896	907	391	114	52	66
24	59	108	631	11,000	3,490	3,600	891	1,020	377	103	53	66
25	64	105	683	10,600	3,240	3,880	868	1,090	356	91	56	65
26	73	105	620	10,600	2,930	3,960	845	1,100	337	85	65	64
27	79	106	546	10,000	2,610	3,960	908	1,090	334	*81	85	64
28	81	105	494	9,380	2,240	3,930	1,130	1,100	331	80	123	67
29	82	104	512	8,740	-	3,820	1,520	1,090	345	80	151	66
30	83	105	669	8,120	-	3,630	1,570	1,020	387	76	171	72
31	85	-	1,090	7,640	-	3,400	-	935	-	72	175	-
Total	1,607	3,854	21,250	201,050	128,440	69,640	41,839	30,183	16,565	5,289	2,283	2,502
Mean	51.8	128	685	6,485	4,587	2,246	1,395	974	552	171	73.6	83.4
Cfsm	0.073	0.180	0.965	9.13	6.46	3.16	1.96	1.37	0.777	0.241	0.104	0.117
In.	0.08	0.20	1.11	10.53	6.73	3.65	2.19	1.58	0.87	0.28	0.12	0.13
Ac-ft	3,190	7,640	42,150	398,800	254,800	138,100	82,990	59,870	32,860	10,490	4,530	4,950

Calendar year 1952: Max 9,800 Min 20 Mean 1,093 Cfsm 1.54 In. 20.89 Ac-ft 791,200
Water year 1952-53: Max 11,700 Min 38 Mean 1,437 Cfsm 2.02 In. 27.47 Ac-ft 1,040,000

* Discharge measurement made on this day.
Note.--Backwater from debris Dec. 6 to Jan. 29, June 16 to Sept. 30.

Clackamas River at Big Bottom, Oreg.

Location.--Lat 45°01'00", long. 121°55'00", in SE¼ sec. 26, T. 6 S., R. 7 E., on right bank just downstream from Pot Creek at lower end of Big Bottom, half a mile upstream from site of proposed dam and 28 miles southeast of Estacada. Inflow between gage and measuring section 2,000 ft downstream is included in records.

Drainage area.--136 sq mi at measuring section 2,000 ft downstream.

Records available.--April 1920 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 2,057.56 ft above mean sea level, datum of 1929 (Public Roads Administration benchmark).

Average discharge.--33 years, 466 cfs.

Extremes.--Maximum discharge during year, 6,340 cfs Jan. 18 (gage height, 8.63 ft), from rating curve extended above 2,200 cfs by logarithmic plotting; minimum, 235 cfs Nov. 28 (gage height, 1.91 ft).
1920-53: Maximum discharge, 6,750 cfs Mar. 31, 1931, Dec. 15, 1946, from rating curves extended above 3,500 and 1,700 cfs, respectively; maximum gage height, that of Jan. 18, 1953; minimum discharge, 184 cfs Sept. 12, 1942.

Remarks.--Records excellent except those above 3,000 cfs, which are fair. No regulation or diversion above station.

Cooperation.--Water-stage-recorder graph and 11 discharge measurements furnished by Portland General Electric Co.

Revisions (water years).--WSP 1218: Drainage area. WSP 1248: 1943.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
1.9	233	4.5	1,400	1.8	247	5.0	1,850
2.5	393	6.0	2,790	2.5	485	6.7	3,610
3.5	800	8.0	5,340	3.5	940		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	263	263	263	*283	1,330	*450	468	650	745	436	288	275
2	263	258	263	390	1,230	440	454	605	713	432	288	272
3	261	258	263	492	1,970	432	446	*585	672	432	288	269
4	261	256	296	419	1,630	426	446	641	646	422	288	269
5	261	256	288	374	1,460	418	446	740	636	415	297	269
6	261	254	*280	353	1,600	415	450	860	690	412	317	269
7	261	256	314	378	1,680	408	446	885	*840	412	294	266
8	261	256	290	528	1,490	415	429	825	765	408	288	266
9	261	256	278	2,260	1,230	429	426	740	722	394	*284	266
10	261	258	368	1,320	1,080	454	412	672	736	380	284	266
11	258	266	422	1,150	960	497	412	628	718	*370	284	262
12	261	280	488	2,240	860	525	412	618	736	362	281	262
13	261	298	378	2,300	785	493	408	623	708	356	281	262
14	258	280	328	1,360	740	471	394	646	682	352	278	262
15	258	269	301	962	690	489	390	632	668	342	278	262
16	258	263	288	1,560	704	541	390	623	650	334	278	259
17	258	261	278	3,050	755	529	394	654	641	331	275	259
18	258	258	273	5,320	668	513	404	736	628	320	275	259
19	258	*256	268	3,600	614	509	418	940	601	320	272	259
20	258	256	266	3,080	585	497	454	885	565	317	272	*259
21	258	254	266	*2,080	561	489	521	835	541	317	272	259
22	258	251	270	1,620	541	521	567	755	525	314	272	259
23	258	251	261	1,560	521	553	659	718	513	310	272	256
24	258	251	256	1,270	501	573	664	695	493	307	278	256
25	258	251	251	1,190	485	605	668	646	482	304	284	256
26	266	249	251	1,040	474	569	713	740	471	304	348	256
27	256	249	249	900	468	549	860	900	460	300	310	256
28	256	244	249	845	464	*541	890	820	464	300	300	278
29	256	247	278	885	-	521	790	815	460	297	300	266
30	258	251	314	930	-	505	718	790	450	294	284	272
31	263	-	290	1,070	-	493	-	740	-	291	278	-
Total	8,045	7,756	9,128	44,809	26,076	15,270	15,549	22,642	18,621	10,885	8,888	7,906
Mean	260	259	294	1,445	931	493	518	730	621	351	287	264
Cfsm	1.91	1.90	2.16	10.6	6.85	3.63	3.81	5.37	4.57	2.58	2.11	1.94
In.	2.20	2.12	2.50	12.3	7.13	4.18	4.25	6.19	5.09	2.98	2.43	2.16
Ac-ft	15,960	15,380	18,110	88,880	51,720	30,290	30,840	44,910	36,930	21,590	17,630	15,680

Calendar year 1952: Max 1,290 Min 244 Mean 451 Cfsm 3.32 In. 45.18 Ac-ft 327,800
Water year 1952-53: Max 5,320 Min 244 Mean 536 Cfsm 3.94 In. 53.56 Ac-ft 387,900

Peak discharge (base, 1,200 cfs).--Jan. 9 (7:30 a.m.) 2,920 cfs (6.12 ft); Jan. 13 (12:30 a.m.) 2,900 cfs (6.10 ft); Jan. 18 (6 p.m.) 6,340 cfs (8.63 ft); Feb. 3 (12 m.) 2,250 cfs (5.48 ft); Feb. 7 (4 p.m.) 1,910 cfs (5.08 ft).
* Discharge measurement made on this day.

Oak Grove Fork above powerplant intake, Oreg.

Location.--Lat 45°04'30", long. 121°57'00", in SW¼ sec. 3, T. 6 S., R. 7 E., on right bank just upstream from Spring Creek, two-thirds of a mile upstream from Kink Creek, 1 mile upstream from intake of power development of Portland General Electric Co., and 24 miles southeast of Estacada. Records include flow of Spring Creek.

Drainage area.--126 sq mi, includes that of Spring Creek.

Records available.--May 1909 to December 1923 (incomplete), December 1923 to September 1953. Published as both Oak Grove Fork of Clackamas River at proposed intake, near Cazadero and Oak Grove Fork of Clackamas River at intake, near Cazadero May 1909 to September 1910, as Oak Grove Fork of Clackamas River at intake, near Cazadero October 1910 to September 1921, and as Oak Grove Fork at Portland Electric Power Co.'s intake, October 1921 to September 1929.

Gage.--Water-stage recorder. Datum of gage is 2,052.31 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. May 21, 1909, to Nov. 17, 1911, staff gage, and Mar. 26, 1912, to Sept. 30, 1923, water-stage recorders, at various sites three-quarters of a mile downstream, below Kink Creek, at different datum.

Average discharge.--29 years (1924-53), 480 cfs.

Extremes.--Maximum discharge during year, 3,390 cfs Jan. 18 (gage height, 5.54 ft), from rating curve extended above 1,900 cfs by logarithmic plotting; maximum gage height, 5.78 ft Jan. 18 (backwater from debris); minimum discharge, 298 cfs Dec. 16.

1909-53: Maximum discharge, 5,000 cfs Jan. 7, 1923 (gage height, 5.45 ft, site and datum then in use), computed from flow at stations on Clackamas River; minimum, 236 cfs Oct. 15, 16, 18, 1931 (gage height, 1.42 ft).

Remarks.--Records good except those above 2,000 cfs, which are fair. No diversion above station; no regulation.

Cooperation.--Water-stage-recorder graph and 12 discharge measurements furnished by Portland General Electric Co.

Revisions (water years).--WSP 1248: 1909, 1910(M), 1916, 1918, 1923, 1932.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17		Jan. 18 to Sept. 30			
2.2	325	1.8	325	3.0	1,010
3.0	900	2.0	395	4.0	2,160
4.0	1,990	2.5	645	4.7	3,100

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	342	330	312	320	1,210	515	520	693	840	515	415	388
2	342	325	312	369	1,120	510	515	*681	798	505	415	386
3	342	320	312	374	1,500	495	515	675	757	495	411	370
4	342	320	325	347	1,420	490	515	705	744	495	411	370
5	342	320	320	336	1,340	490	520	757	738	490	419	364
6	342	320	325	330	1,500	490	520	826	*777	485	427	364
7	342	320	342	352	1,510	490	510	840	840	480	415	360
8	342	316	320	485	1,380	500	495	848	770	476	411	360
9	336	320	316	876	1,180	515	490	833	738	471	407	360
10	336	320	342	*640	1,050	530	485	784	724	466	407	356
11	*336	325	*364	662	938	546	485	744	724	466	407	356
12	330	336	369	945	864	546	485	731	724	462	403	356
13	330	342	336	1,010	812	530	480	724	718	458	403	353
14	330	330	320	828	777	515	471	731	693	453	403	353
15	330	320	312	722	731	515	471	731	681	448	403	350
16	330	316	312	1,050	718	541	476	724	663	444	399	350
17	330	316	312	1,750	712	525	485	731	657	444	399	350
18	330	316	307	3,040	663	525	495	757	633	*440	395	346
19	330	316	307	2,380	621	515	520	856	633	435	395	*346
20	330	316	312	*1,980	615	515	546	864	621	431	395	346
21	330	312	312	1,510	591	510	580	840	603	427	395	346
22	330	312	316	1,350	585	536	597	791	585	427	*395	346
23	330	312	307	1,400	563	563	633	784	574	427	399	346
24	330	312	307	1,180	552	580	651	784	568	427	403	342
25	325	312	307	1,070	536	585	663	750	558	423	403	342
26	325	312	307	912	530	563	693	856	546	423	427	342
27	325	312	307	819	530	552	784	1,070	541	419	407	346
28	325	307	307	784	*530	552	805	947	541	419	403	353
29	325	*307	316	840	-	*541	757	912	530	419	403	346
30	325	312	325	888	-	541	724	872	520	415	395	353
31	330	-	316	1,030	-	541	-	840	-	415	392	-
Total	10,314	9,554	9,904	30,579	25,078	16,362	16,886	24,681	20,039	14,000	12,562	10,648
Mean	333	318	319	986	896	528	563	796	668	452	405	355
Cfsm	2.64	2.52	2.53	7.83	7.11	4.19	4.47	6.32	5.30	3.59	3.21	2.82
In.	3.04	2.82	2.92	9.03	7.40	4.83	4.98	7.28	5.91	4.13	3.71	3.14
Ac-ft	20,460	18,950	19,640	60,650	49,740	32,450	33,490	48,950	39,750	27,770	24,920	21,120

Calendar year 1952: Max 1,190 Min 307 Mean 486 Cfsm 3.86 In. 52.48 Ac-ft 352,800
Water year 1952-53: Max 3,040 Min 307 Mean 550 Cfsm 4.37 In. 59.19 Ac-ft 397,900

Peak discharge (base, 940 cfs).--Jan. 9 (4:30 a.m.) 1,040 cfs (3.11 ft); Jan. 12 (10:30 p.m.) 1,080 cfs (3.15 ft); Jan. 18 (12 m.) 3,390 cfs (5.54 ft); Feb. 3 (2 p.m.) 1,660 cfs (3.59 ft); May 27 (3 to 4 a.m.) 1,110 cfs (3.10 ft).

* Discharge measurement made on this day.

Clackamas River above Three Lynx Creek, Oreg.

Location.--Lat 45°07'30", long. 122°04'20", in NE¼ sec. 21, T. 5 S., R. 6 E., on right bank just downstream from powerplant, 500 ft upstream from Three Lynx Creek and 17 miles southeast of Estacada.
Drainage area.--479 sq mi.
Records available.--April 1909 to December 1913, October 1921 to September 1953.
Gage.--Water-stage recorder. Datum of gage is 1,091.69 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (levels by Portland General Electric Co.). Apr. 23, 1909, to Jan. 4, 1914, staff gage at about the same site and datum.
Average discharge.--36 years, 1,903 cfs.
Extremes.--Maximum discharge during year, 29,900 cfs Jan. 18 (gage height, 13.41 ft), from rating curve extended above 15,000 cfs by logarithmic plotting; minimum, 365 cfs Oct. 9, 10, 14 (gage height, 0.50 ft); minimum daily, 640 cfs Oct. 16.
1909-13, 1921-53: Maximum discharge, 34,800 cfs Mar. 31, 1931 (gage height 15.5 ft), from rating curve extended above 11,000 cfs; minimum observed, 357 cfs Sept. 15, 1949; minimum daily, 536 cfs Oct. 22, 1930.
Remarks.--Records excellent except those for periods of no gage-height record or indefinite stage-discharge relation, which are good. Water diverted from Oak Grove Fork is used in powerplant on Clackamas River just above station. Considerable diurnal fluctuation during periods of low flow.
Cooperation.--Water-stage-recorder graph and 12 discharge measurements furnished by Portland General Electric Co.
Revisions.--WSP 1184: Drainage area. WSP 1248: 1910(M), 1912, 1948-50(m).

Rating tables, water year 1952-53, except period of indefinite stage-discharge relation (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18

1.1	635	7.0	8,740
2.0	1,200	9.0	14,100
3.0	2,120	13.0	28,100
5.0	4,730		

Jan. 19 to Sept. 30

1.2	710
2.0	1,250
3.0	2,140
5.0	4,730

Note.--Same as preceding table above 5.0 ft.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	707	719	714	1,420	7,130	1,870	1,990	2,800	2,810	1,540	897	870
2	691	697	733	2,970	a6,000	1,800	1,900	2,590	2,690	1,540	897	851
3	685	693	738	3,610	10,500	1,760	1,850	2,470	2,550	1,540	897	838
4	678	684	909	2,700	8,740	1,700	*1,620	2,630	2,430	1,500	897	813
5	670	679	*967	2,130	6,920	1,670	1,820	3,210	2,380	*1,470	925	*807
6	660	675	a900	1,820	a9,000	1,620	1,870	3,690	2,620	1,470	1,040	813
7	650	684	a1,250	2,040	*8,430	*1,560	1,810	3,600	3,360	1,470	953	813
8	665	665	a1,150	3,980	7,500	1,630	1,760	3,330	3,170	1,460	*918	807
9	663	674	a1,000	*15,800	5,610	1,800	1,710	*2,990	2,860	1,390	904	795
10	674	693	a1,800	7,150	4,610	1,990	1,660	2,670	2,780	1,340	890	795
11	661	718	2,160	6,570	3,950	2,240	1,640	2,460	2,770	1,280	884	789
12	670	763	3,180	10,800	3,480	2,360	1,690	2,330	2,830	1,250	877	789
13	657	679	2,260	9,840	3,150	2,190	1,670	2,370	2,670	1,230	870	783
14	652	847	1,680	6,380	2,950	2,040	1,630	2,450	2,530	1,200	870	777
15	e650	775	1,410	4,560	2,740	2,060	1,620	2,440	2,440	1,160	877	777
16	e640	720	1,220	7,420	2,830	2,530	1,620	2,330	2,360	1,130	864	777
17	e660	708	1,100	16,100	4,060	2,540	1,690	2,320	2,330	1,100	864	765
18	e650	703	1,020	24,600	3,410	2,370	1,730	2,650	2,280	1,080	858	760
19	e660	704	974	18,100	2,930	2,300	1,900	3,760	2,190	1,060	851	754
20	e660	695	943	13,700	2,690	2,240	2,270	3,480	2,100	1,040	851	743
21	e670	674	962	9,520	2,480	2,200	2,710	3,240	1,950	1,020	851	738
22	e660	668	1,100	7,090	2,360	2,790	2,970	2,930	1,890	1,000	844	738
23	e680	678	1,030	7,090	2,230	3,150	3,290	2,780	1,820	995	838	738
24	705	670	922	5,470	2,090	3,220	3,130	2,680	1,760	981	870	726
25	*670	670	879	5,180	1,980	3,250	3,060	2,480	1,710	967	884	726
26	673	664	849	4,540	1,920	2,830	3,250	2,800	1,670	953	1,110	721
27	672	669	849	3,780	1,890	2,530	4,130	3,590	1,620	939	1,050	721
28	678	647	831	3,500	1,900	2,380	4,250	3,300	1,630	932	967	789
29	683	*646	1,150	a4,000	-	2,240	3,530	3,250	1,610	925	981	771
30	693	672	1,820	a4,500	-	2,180	3,150	*3,120	1,590	904	918	783
31	697	-	1,580	5,510	-	2,120	-	2,890	-	904	884	-
Total	20,784	21,031	38,080	221,870	123,480	69,180	69,120	89,630	69,420	36,770	28,081	23,367
Mean	670	701	1,228	7,157	4,410	2,232	2,304	2,891	2,314	1,186	906	779
Cfsm	1.40	1.46	2.56	14.9	9.21	4.66	4.81	6.04	4.83	2.48	1.89	1.63
In.	1.61	1.63	2.96	17.23	9.59	5.37	5.37	6.96	5.39	2.85	2.18	1.81
Ac-ft	41,220	41,710	75,530	440,100	244,900	137,200	137,100	177,800	137,700	72,930	55,700	46,350

Calendar year 1952: Max 7,870 Min 640 Mean 1,725 Cfsm 3.60 In. 49.02 Ac-ft 1,252,000
Water year 1952-53: Max 24,600 Min 640 Mean 2,221 Cfsm 4.64 In. 62.95 Ac-ft 1,608,000

Peak discharge (base, 8,100 cfs).--Jan. 9 (6 a.m.) 21,500 cfs (11.26 ft); Jan. 12 (12 p.m.) 11,700 cfs (8.18 ft); Jan. 18 (5 p.m.) 29,900 cfs (13.41 ft); Feb. 1 (3 a.m.) 8,310 cfs (6.82 ft); Feb. 3 (2 p.m.) 12,300 cfs (8.39 ft); Feb. 7 (6 p.m.) 9,470 cfs (7.30 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station near Cazadero.
e Stage-discharge relation indefinite; discharge estimated as indicated in footnote "a".

Clackamas River near Cazadero, Oreg.

Location.--Lat 45°14'30", long. 122°16'20", in NE¼ sec. 11, T. 4 S., R. 4 E., on right bank half a mile upstream from backwater from Cazadero Dam of Portland General Electic Co. and 2½ miles southeast of Cazadero.
Drainage area.--657 sq mi. At site April to December 1908, 664 sq mi (revised).
Records available.--April 1908 to September 1953. Published as "at Estacada" April to December, 1908.
Gage.--Water-stage recorder. Datum of gage is 532.0 ft above mean sea level (levels by Portland General Electric Co.); gage readings have been reduced to elevations above mean sea level. Apr. 6 to Dec. 31, 1908, staff gage 5 miles downstream at different datum. Jan. 1 to Nov. 19, 1909, staff gages and Nov. 20, 1909, to Oct. 9, 1922, water-stage recorder, at site half a mile downstream at datum 532.0 ft lower. Oct. 10 to Nov. 14, 1922, staff gage at present site and datum.
Average discharge.--45 years, 2,646 cfs.
Extremes.--Maximum discharge during year, 40,700 cfs Jan. 18 (elevation, 552.16 ft); minimum, 490 cfs Nov. 29 (elevation, 533.20 ft); minimum daily, 738 cfs Nov. 28.
1908-53: Maximum discharge, 60,800 cfs Mar. 31, 1931 (elevation, 556.5 ft), by computation of peak flow over dam, from data furnished by Portland General Electric Co.; minimum, 410 cfs Oct. 20, 1925, Sept. 28, 1930 (elevation 532.03 ft), caused by shutdown in powerplant at Three Lynx; minimum daily, 587 cfs Aug. 17, 1930.
Remarks.--Records good. Some diurnal fluctuation during low flow caused by Oak Grove powerplant. Oregon City diverts about 3,300 acre-ft annually from South Fork Clackamas River for municipal water supply.
Cooperation.--Water-stage-recorder graph and 12 discharge measurements furnished by Portland General Electric Co.
Revisions.--WSP 1184: Drainage area. WSP 1248: 1908-9, 1910(M), 1916, 1917(M), 1922(M), 1923.

Rating tables, water year 1952-53 (elevation, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
533.9	725	542.0	12,700	534.5	855	540.0	7,400
535.0	1,420	545.0	20,200	535.0	1,130	544.0	17,300
537.0	3,390	551.0	37,100	536.0	1,840	548.0	27,700
539.0	6,340			538.0	3,890		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	852	849	804	1,720	10,400	2,570	2,990	3,640	3,930	1,990	1,100	1,010
2	799	807	837	3,640	7,880	2,450	2,820	3,400	3,710	1,950	1,090	993
3	833	795	847	4,680	14,300	2,320	2,670	3,220	3,480	1,940	1,090	988
4	818	*792	984	3,510	12,900	2,220	*2,590	3,370	3,300	1,900	1,080	976
5	817	795	*1,190	2,740	9,980	2,180	2,590	4,050	3,200	*1,850	1,090	*949
6	816	781	1,020	2,320	11,800	2,110	2,620	4,620	3,500	1,820	1,260	960
7	790	787	1,500	2,480	*11,200	*2,140	2,540	4,560	4,680	1,810	1,150	954
8	820	780	1,390	4,410	10,000	2,380	2,420	4,330	4,580	1,800	*1,100	954
9	822	782	1,140	21,300	7,200	2,710	2,350	*4,020	4,070	1,700	1,070	944
10	817	790	2,430	*10,100	5,740	2,940	2,290	3,680	3,890	1,630	1,060	932
11	817	821	3,490	8,880	5,080	3,250	2,260	3,360	3,760	1,570	1,040	927
12	808	880	4,190	14,000	4,490	3,420	2,400	3,200	3,790	1,520	1,030	927
13	813	1,030	2,930	13,300	4,060	3,150	2,390	3,200	3,620	1,480	1,020	916
14	801	1,000	2,140	9,000	3,790	2,860	2,280	3,310	3,370	1,460	1,010	910
15	799	901	1,770	6,590	3,620	2,850	2,190	3,400	3,240	1,420	1,000	910
16	790	833	1,530	10,800	3,800	3,470	2,250	3,270	3,100	1,380	998	905
17	815	834	1,390	18,800	5,920	3,620	2,360	3,160	3,020	1,340	993	900
18	796	819	1,270	35,200	4,960	3,370	2,400	3,450	2,950	1,310	988	900
19	803	805	1,210	25,600	4,110	3,260	2,630	4,960	2,910	1,290	982	900
20	803	799	1,150	18,600	3,700	3,220	3,120	5,060	2,880	1,270	976	895
21	804	803	1,160	13,400	3,410	3,240	3,660	4,620	2,640	1,250	982	890
22	785	792	1,450	9,380	3,210	4,640	3,900	4,220	2,500	1,230	971	895
23	804	781	1,400	9,650	2,990	5,230	4,210	4,020	2,410	1,220	966	900
24	825	785	1,190	7,360	2,840	5,130	4,050	4,190	2,320	1,200	1,000	900
25	*807	774	1,100	6,820	2,710	5,140	3,920	3,890	2,250	1,190	1,010	895
26	787	760	1,050	6,320	2,590	4,400	4,140	4,100	2,190	1,180	1,230	885
27	787	757	1,030	5,270	2,540	3,880	4,990	5,660	2,120	1,150	1,270	895
28	779	738	1,000	4,870	2,600	3,590	5,230	5,180	2,110	1,140	1,130	1,020
29	792	740	1,280	5,410	-	3,300	4,480	4,810	2,090	1,130	1,150	988
30	806	764	2,290	5,900	-	3,270	4,010	*4,520	2,060	1,120	1,070	986
31	817	-	1,990	7,300	-	3,220	-	4,150	-	1,110	1,030	-
Total	25,022	24,374	48,152	299,350	167,820	101,530	92,750	124,620	93,670	45,350	32,936	28,004
Mean	807	812	1,553	9,656	5,994	3,275	3,092	4,020	3,122	1,463	1,062	933
Cfsm	1.23	1.24	2.36	14.7	9.12	4.98	4.71	6.12	4.74	2.23	1.62	1.42
In.	1.42	1.38	2.73	16.94	9.50	5.75	5.25	7.05	5.30	2.57	1.86	1.59
Ac-ft	49,630	48,350	95,510	593,800	332,900	201,400	184,000	247,200	185,800	89,950	65,330	55,550

Calendar year 1952: Max 11,200 Min 738 Mean 2,220 Cfsm 3.38 In. 45.99 Ac-ft 1,611,000
Water year 1952-53: Max 35,200. Min 738 Mean 2,969 Cfsm 4.52 In. 61.34 Ac-ft 2,149,000

Peak discharge (base, 11,000 cfs).--Jan. 9 (7:30 a.m.) 29,100 cfs (548.26 ft); Jan. 13 (3 a.m.) 15,100 cfs (543.01 ft); Jan. 18 (5:30 a.m.) 40,700 cfs (552.16 ft); Feb. 1 (5 to 6 a.m.) 11,300 cfs (541.60 ft); Feb. 3 (4 p.m.) 18,400 cfs (544.44 ft).
* Discharge measurement made on this day.

Johnson Creek at Sycamore, Oreg.

Location.--Lat 45°28'40", long. 122°30'25", in lot 2, SW¼ sec. 13, T. 1 S., R. 2 E., on right bank a third of a mile southwest of Sycamore station and 2½ miles east of city limits of Portland.

Drainage area.--28.2 sq mi.

Records available.--June 1940 to September 1953.

Gage.--Water-stage recorder and concrete control with steel weir for low flow. Datum of gage is 228.47 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--13 years, 52.1 cfs.

Extremes.--Maximum discharge during year, 1,020 cfs Jan. 18 (gage height, about 10.0 ft); minimum, 0.3 cfs Nov. 28 (gage height, 0.66 ft).
1940-53: Maximum discharge, 2,110 cfs Feb. 10, 1949 (gage height, 13.77 ft, from floodmark); minimum, 0.2 cfs Aug. 14-16, 18-22, 1940, Aug. 2, 21, 22, 1941.

Remarks.--Records good except those for periods of no gage-height record and those below 3 cfs, which are fair. Small diversions above station for irrigation. Slight diurnal fluctuation at low flow caused by recreational ponds upstream.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.8	0.7	2.0	46
.9	1.3	3.0	106
1.0	2.2	5.0	290
1.1	4.5	7.5	590
1.5	22	9.5	920

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	1.8	2.4	61	165	34	65	46	43	6.6	2.1	2.7
2	1.8	1.8	4.0	131	205	31	56	40	34	6.6	2.1	2.2
3	1.8	1.3	3.8	146	356	31	47	38	27	6.1	1.8	2.0
4	1.9	1.4	3.8	89	236	26	40	32	22	5.7	1.9	1.9
5	1.8	1.5	6.1	62	248	24	38	26	22	5.3	2.2	2.2
6	1.3	1.3	6.1	48	238	22	34	22	38	4.5	3.1	2.1
7	1.6	1.5	17	113	188	19	32	*26	72	4.0	2.9	1.8
8	1.6	1.3	8.6	*372	141	18	33	28	71	3.8	2.9	1.8
9	2.2	1.2	7.0	586	103	16	38	20	58	3.6	2.4	2.2
10	1.8	1.2	24	236	81	18	32	18	52	3.6	1.8	2.4
11	2.1	2.4	21	330	*66	23	28	15	39	3.4	2.0	*2.4
12	1.9	2.1	15	277	57	36	34	13	34	3.1	2.0	2.4
13	1.5	1.9	11	273	50	27	34	11	33	2.2	1.8	2.9
14	1.3	2.1	8.2	209	48	22	28	11	23	2.9	1.8	1.8
15	1.3	1.8	6.6	194	53	30	25	12	18	3.1	1.8	2.0
16	1.5	1.7	6.1	354	89	149	24	12	16	3.1	1.7	2.7
17	1.4	1.4	5.3	422	273	178	28	11	13	2.9	1.7	2.4
18	1.5	1.7	4.9	644	234	145	22	15	12	2.7	2.1	2.4
19	1.3	1.6	5.3	597	147	115	19	32	*13	2.4	1.8	2.4
20	1.2	1.5	5.3	610	112	107	16	22	13	1.8	1.8	2.0
21	*1.5	1.5	7.0	*333	88	105	15	34	11	2.4	2.0	1.6
22	1.8	1.5	21	343	82	278	15	50	9.9	2.4	2.2	1.8
23	1.5	1.5	30	376	77	a230	16	46	9.0	2.0	2.4	2.0
24	1.2	1.3	21	235	62	a260	18	72	8.2	2.0	2.1	2.1
25	1.8	1.2	15	436	52	a200	14	55	7.4	2.0	3.1	2.1
26	1.4	*1.5	12	422	46	a150	15	56	7.4	2.2	5.3	2.1
27	.9	1.8	11	268	42	a130	35	250	7.4	1.8	5.7	2.1
28	.8	a1.0	12	210	39	a110	25	155	7.4	2.0	3.8	2.9
29	1.0	a1.5	32	167	-	a100	26	102	7.4	2.2	3.8	2.9
30	2.4	1.6	56	138	-	a90	34	76	7.0	*2.1	3.6	5.2
31	2.4	-	50	156	-	*79	-	57	-	2.0	2.9	-
Total	49.3	46.9	438.5	9,038	3,578	2,805	886	1,403	735.1	100.5	78.6	69.5
Mean	1.59	1.56	14.1	292	128	90.4	29.5	45.3	24.5	3.24	2.54	2.32
Cfsm	0.056	0.055	0.500	10.4	4.54	3.21	1.05	1.61	0.869	0.115	0.090	0.082
In.	0.07	0.06	0.58	11.92	4.72	3.70	1.17	1.85	0.97	0.13	0.10	0.09
Ac-ft	98	93	870	17,930	7,100	5,560	1,760	2,780	1,460	199	156	138

Calendar year 1952: Max 386 Min 0.8 Mean 31.9 Cfsm 1.13 In. 15.42 Ac-ft 23,180
Water year 1952-53: Max 844 Min 0.8 Mean 52.7 Cfsm 1.87 In. 25.36 Ac-ft 38,140

Peak discharge (base, 450 cfs).--Jan. 9 (3:30 a.m.) 760 cfs (8.67 ft); Jan. 18 (about 7 p.m.) 1,020 cfs (about 10.0 ft); Jan. 22 (11:30 p.m.) 569 cfs (7.34 ft); Jan. 25 (11 p.m.) 495 cfs (6.77 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on the basis of recorded range in stage when available and records for McKay Creek near North Plains.

Salmon Creek near Battle Ground, Wash.

Location.--Lat 45°46'25", long. 122°26'35", in NE¼SW¼ sec. 4, T. 3 N., R. 3 E., on left bank 100 ft upstream from highway bridge, 150 ft downstream from Rock Creek, and 4 miles east of Battle Ground.

Drainage area.--18.3 sq mi.

Records available.--October 1943 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 354.88 ft above mean sea level (river-profile survey). Prior to Oct. 1, 1950, staff gage at same site at datum 1.0 ft higher. Oct. 1, 1950, to June 24, 1953, staff gage and crest-stage indicator at same site and datum.

Average discharge.--9 years (1944-53), 63.3 cfs.

Extremes.--Maximum discharge during year, 925 cfs Jan. 18 (gage height, 3.25 ft); minimum observed, 1.8 cfs Oct. 6, 7, 16-18, 22 (gage height, 0.84 ft).
1943-53: Maximum discharge observed, 1,440 cfs Feb. 17, 1949 (gage height, 4.10 ft, present datum), from rating curve extended above 520 cfs; minimum observed, 1.3 cfs Aug. 20, 22, 28-30, Sept. 5-9, 13, 14, 1949, Sept. 14-16, 22, 1951.

Remarks.--Records good after June 25, fair prior to that time. No diversion or regulation.

Revisions (water years).--WSP 1044: 1944.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.8	1.6	1.9	90
1.0	3.1	2.2	180
1.2	5.7	2.5	315
1.4	12	3.2	870
1.6	30		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.2	3.3	5.4	80	247	36	96	49	49	13.5	5.2	5.4
2	2.1	3.1	7.0	162	229	33	80	45	42	12	4.8	5.2
3	2.0	2.2	8.7	156	337	30	65	42	36	11.5	5.1	4.5
4	2.0	2.7	12	120	265	28	57	36	*34	11	6.1	3.9
5	2.0	2.7	30	85	238	26	53	33	33	*11	5.4	3.9
6	1.8	2.7	13.5	65	238	23	49	*30	36	10	7.0	3.9
7	1.8	2.6	49	75	196	23	42	36	90	9.5	6.1	4.0
8	*2.0	2.6	61	174	188	23	53	39	88	9.5	5.6	4.4
9	2.0	2.6	33	418	126	21	45	36	72	9.1	5.4	4.1
10	2.1	2.9	144	220	103	21	42	33	59	8.7	*5.0	3.9
11	2.1	3.8	75	212	80	23	39	30	47	8.3	4.5	3.6
12	2.2	3.8	120	238	65	26	42	28	47	8.7	4.1	3.4
13	2.2	5.4	49	229	57	23	39	26	47	8.3	4.1	3.5
14	2.1	5.1	36	220	49	23	36	26	34	9.1	4.0	3.4
15	2.0	4.5	26	295	45	28	36	26	32	8.7	4.0	3.3
16	1.8	3.5	19	472	70	162	39	23	26	7.5	4.5	*3.2
17	1.8	3.1	16	589	*126	132	36	21	26	7.2	4.1	3.3
18	1.8	*3.1	12	800	120	126	30	49	21	7.0	3.9	3.2
19	2.0	3.1	13.5	*524	114	114	28	30	26	7.2	3.9	3.1
20	2.0	3.1	12	406	90	102	26	30	23	7.2	4.0	3.2
21	2.0	2.9	21	326	65	90	26	61	19	6.8	4.0	2.8
22	1.8	2.9	80	370	70	256	28	96	17	6.6	3.6	2.9
23	2.2	3.1	102	451	61	196	28	85	17	7.2	3.6	3.3
24	4.5	3.1	53	305	49	*162	26	126	17	6.4	6.1	3.3
25	2.9	3.1	39	305	49	138	23	90	18.5	6.4	6.8	3.1
26	2.4	2.9	30	285	45	114	28	144	17.5	6.4	9.1	3.1
27	2.2	2.9	26	265	42	111	36	162	17.5	5.7	13.5	3.2
28	2.4	2.9	21	275	36	108	36	126	18.5	5.6	9.1	7.0
29	2.6	2.9	49	315	-	85	42	96	17.5	5.4	7.2	4.4
30	5.9	2.9	70	229	-	120	49	80	14	5.4	5.7	9.7
31	4.2	-	61	188	-	102	-	57	-	5.4	5.4	-
Total	73.1	95.5	1,294.1	8,854	3,399	2,505	1,255	1,791	1,041.5	252.3	170.9	119.2
Mean	2.36	3.18	41.7	286	121	80.8	41.8	57.8	34.7	8.14	5.51	3.97
Cfsm	0.129	0.174	2.28	15.6	6.61	4.42	2.28	3.16	1.90	0.445	0.301	0.217
In.	0.15	0.19	2.63	17.99	6.91	5.09	2.55	3.64	2.12	0.51	0.35	0.24
Ac-ft	145	189	2,570	17,560	6,740	4,970	2,490	3,550	2,070	500	339	236

Calendar year 1952: Max 502 Min 1.8 Mean 34.8 Cfsm 1.90 In. 25.87 Ac-ft 25,240
Water year 1952-53: Max 800 Min 1.8 Mean 57.1 Cfsm 3.12 In. 42.37 Ac-ft 41,360

Peak discharge (base, 470 cfs).--Probably Jan. 9 (time and discharge unknown); Jan. 18 (time unknown) 925 cfs (3.25 ft); probably Jan. 23 (time unknown) 616 cfs (2.94 ft).
* Discharge measurement made on this day.

Lewis River near Cougar, Wash.

Location.--Lat 46°03'30", long. 122°12'50", in SE¼ sec. 29, T. 7 N., R. 5 E., on left bank 1 mile downstream from Swift Creek and 4 miles east of Cougar.

Drainage area.--481 sq mi.

Records available.--July to October 1909, November 1909 to March 1912 (gage heights only), June 1924 to September 1953. Published as "at Peterson ranch, near Cougar" 1909.

Gage.--Water-stage recorder. Datum of gage is 576.4 ft above mean sea level (river-profile survey). July 1909 to June 1910 staff gage at site 1,000 ft upstream from Swift Creek at different datum. July 1910 to March 1912 staff gage at approximately present site at different datum. June 19 to Aug. 25, 1924, staff gage and Aug. 26, 1924, to Dec. 28, 1934, water-stage recorder, at present site at datum 2.0 ft higher.

Average discharge.--29 years (1924-53), 2,817 cfs.

Extremes.--Maximum discharge during year, 23,900 cfs Jan. 18 (gage height, 11.08 ft); minimum, 534 cfs Nov. 29 (gage height, 2.84 ft).
1909-12, 1924-53: Maximum discharge, 54,400 cfs Dec. 21, 1933 (gage height, 15.7 ft, datum then in use), from rating curve extended above 15,000 cfs; minimum, 454 cfs Oct. 21, 1931 (gage height, 0.01 ft, datum then in use).

Remarks.--Records good except those for September, which are fair. No diversions or regulation.

Revisons (water years).--WSP 904: 1939. WSP 964: Drainage area.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 16-30)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
2.8	510	6.0	4,470	3.0	705	6.0	4,570
3.0	630	7.0	6,830	3.3	915	7.0	6,940
3.5	1,010	8.0	9,900	3.6	1,150	8.0	9,950
4.0	1,490	9.0	13,600	4.0	1,530	9.0	13,700
4.5	2,070	11.0	23,400	4.5	2,110	10.5	20,700
5.0	2,750			5.0	2,800		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	700	672	588	1,430	14,700	1,990	2,540	4,740	4,200	2,650	1,290	1,100
2	686	630	644	2,370	11,000	1,910	2,410	4,200	4,000	2,820	1,280	1,070
3	686	618	728	4,190	12,000	1,870	2,370	3,960	3,860	3,080	1,270	1,040
4	679	612	1,250	3,440	10,500	1,820	2,320	4,220	3,730	3,150	1,250	998
5	672	606	1,470	2,860	8,990	1,790	2,270	5,310	*3,720	3,150	1,230	968
6	665	600	1,110	2,510	8,320	1,750	2,230	6,540	3,900	*3,290	1,320	952
7	665	594	1,240	2,920	9,120	1,740	2,150	*6,940	4,760	3,450	1,280	938
8	665	594	1,360	*5,720	8,350	1,800	2,120	6,620	4,720	3,640	1,230	922
9	*658	588	1,170	17,700	7,050	1,930	2,030	5,780	4,400	3,260	1,200	900
10	651	624	1,350	13,900	5,920	2,050	1,970	4,960	4,220	2,980	1,160	878
11	651	770	1,380	16,400	5,340	2,370	1,970	4,320	4,420	2,840	*1,140	878
12	644	802	3,160	20,000	4,490	2,660	2,000	4,020	5,040	2,770	1,130	892
13	637	842	2,810	*16,300	3,980	2,540	1,990	4,020	5,590	2,620	1,110	870
14	630	882	2,140	11,400	3,700	2,380	1,910	4,100	4,980	2,470	1,090	855
15	624	810	1,750	9,080	3,490	2,500	1,870	4,040	4,530	2,290	1,090	848
16	624	714	1,500	11,600	3,610	3,060	1,890	4,140	4,360	2,120	1,080	833
17	630	672	1,340	17,200	3,400	2,880	1,990	4,340	4,320	2,090	1,060	*812
18	630	658	1,250	20,800	3,080	2,770	2,010	4,800	4,160	2,090	1,050	798
19	624	644	1,160	20,700	*2,890	2,710	2,250	5,990	3,770	2,000	1,050	812
20	624	637	1,110	15,600	2,740	2,620	2,700	5,660	3,450	1,870	1,050	798
21	630	*637	1,120	11,900	2,590	2,620	3,230	5,540	3,230	1,770	1,020	777
22	624	618	1,170	11,100	2,510	2,840	3,560	5,340	3,000	1,730	990	777
23	624	606	1,100	13,300	2,400	3,130	4,800	4,800	2,920	1,670	990	777
24	637	600	1,040	11,000	2,290	3,390	5,220	4,740	2,820	1,620	1,090	770
25	624	594	986	9,850	2,200	*3,590	4,960	4,280	2,740	1,520	1,140	764
26	618	582	970	8,060	2,150	3,290	5,040	4,220	2,650	1,480	1,270	757
27	612	576	962	6,910	2,110	3,130	6,620	5,180	2,650	1,430	1,560	757
28	606	564	970	6,360	2,060	3,040	7,270	5,200	2,650	1,410	1,370	990
29	618	552	1,060	7,410	-	2,890	6,240	5,310	2,650	1,380	1,280	878
30	728	552	1,510	8,230	-	2,840	5,450	5,040	2,700	1,340	1,140	1,040
31	728	-	1,520	13,900	-	2,680	-	4,590	-	1,320	1,130	-
Total	20,094	19,450	40,918	324,140	150,980	78,580	95,380	152,940	114,140	71,300	36,340	26,449
Mean	648	648	1,320	10,460	5,392	2,535	3,179	4,934	3,805	2,300	1,172	882
Cfsm	1.35	1.35	2.74	21.7	11.2	5.27	6.61	10.3	7.91	4.78	2.44	1.83
In.	1.55	1.50	3.16	25.06	11.67	6.08	7.37	11.83	8.83	5.51	2.81	2.04
Ac-ft	39,860	38,580	81,160	642,900	299,500	155,900	189,200	303,400	226,400	141,400	72,080	52,460

Calendar year 1952: Max 12,700 Min 552 Mean 2,223 Cfsm 4.62 In. 62.91 Ac-ft 1,614,000
Water year 1952-53: Max 20,800 Min 552 Mean 3,098 Cfsm 6.44 In. 87.41 Ac-ft 2,243,000

Peak discharge (base, 9,000 cfs).--Jan. 9 (2:30 p.m.) 20,600 cfs (10.48 ft); Jan. 11 (6:30 p.m.) 21,700 cfs (10.68 ft); Jan. 18 (7 p.m.) 23,900 cfs (11.08 ft); Jan. 23 (2 a.m.) 14,500 cfs (9.19 ft); Jan. 31 (8 p.m.) 18,200 cfs (10.01 ft); Feb. 7 (11 a.m.) 9,410 cfs (7.85 ft).
* Discharge measurement made on this day.

Reservoirs in Lewis River basin, Wash.

Yale Reservoir.--Lat 45°57'50", long. 122°20'00", in NE¼ sec. 32, T. 6 N., R. 4 E., on left bank of Lewis River just upstream from intake 500 ft upstream from powerhouse, 1 mile upstream from Canyon Creek, and 3 miles southeast of Yale. Records available, August 1952 to September 1953. Indicating gage. Datum of gage is at mean sea level (levels by Pacific Power & Light Co.). Maximum contents observed during year, 401,860 acre-ft June 8 (elevation, 490.02 ft); minimum observed since first filling, 346,900 acre-ft Sept. 30 (elevation, 474.8 ft). Maximum contents observed during period, that of June 8, 1953.

Reservoir is formed by rock-fill dam; storage began July 31, 1952. Usable capacity, 189,530 acre-ft between gage heights 430 ft (lower limit for economic operation) and 490 ft (top of spillway gates). Dead storage, 212,230 acre-ft. Records given herein represent total contents. Water used by Pacific Power & Light Co. for power development. Records of stage and data from which capacity table was computed furnished by Pacific Power & Light Co.

Lake Merwin.--Lat 45°57'25", long. 122°33'15", in SW¼ sec. 34, T. 6 N., R. 2 E., on dam on Lewis River at Ariel. Records available, March 1931 to September 1953. Gage, water-stage recorder. Datum of gage is at mean sea level (levels by Pacific Power & Light Co.). Maximum contents during year, 422,800 acre-ft on several days during January, February, May, and June (elevation, 239.6 ft); minimum, 249,800 acre-ft Dec. 3 (elevation, 192.78 ft). Maximum contents during period 1931-53 not determined; minimum observed since reservoir was first filled, 164,200 acre-ft Dec. 5, 1936 (elevation, 166.7 ft).

Reservoir is formed by concrete arch dam completed in 1931. Usable capacity, 246,000 acre-ft between elevations 165 ft (lower limit of regulation set by Federal Power Commission) and 235 ft (top of spillway gates) above mean sea level. Dead storage, 159,050 acre-ft. Figures given herein represent total contents. Water used for power.

Monthly elevation and total contents, water year October 1952 to September 1953

Date	Yale Reservoir			Lake Merwin		
	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)	Elevation (feet)‡	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30.....	391.53	121,700	-	218.3	341,120	-
Oct. 31.....	412.10	166,090	+44,390	206.2	296,980	-44,140
Nov. 30.....	427.47	205,500	+39,410	193.4	251,880	-45,100
Dec. 31.....	462.83	307,610	+102,100	211.3	315,390	+63,510
Calendar year 1952...	-	-	+307,600	-	-	-53,850
Jan. 31.....	470.13	331,120	+23,510	239.6	422,800	+107,400
Feb. 28.....	462.73	307,300	-23,820	221.6	353,440	-69,360
Mar. 31.....	464.34	312,350	+5,050	207.8	302,740	-50,700
Apr. 30.....	465.38	315,860	+3,510	214.7	327,810	+25,070
May 31.....	487.94	393,890	+78,030	238.3	417,630	+89,820
June 30.....	489.81	401,030	+7,140	238.6	418,820	+1,190
July 31.....	489.60	400,270	-760	238.4	418,030	-790
Aug. 31.....	489.95	401,780	+1,510	237.3	413,660	-4,370
Sept.30.....	474.78	346,930	-54,850	232.9	396,410	-17,250
Water year 1952-53....	-	-	+225,200	-	-	+55,290

† Elevation at 12 p.m. (estimated September to December on basis of 8 to 9 a.m. readings).
‡ Elevation at 12 p.m.

Lewis River at Ariel, Wash.

Location.--Lat 45°57'10", long. 122°33'45", in NW¼NE¼ sec. 4, T. 5 N., R. 2 E., on right bank at Ariel, half a mile downstream from Ariel Dam and powerplant and 3 miles upstream from Cedar Creek. Prior to Oct. 1, 1952, discharge measurements made half a mile downstream.
Drainage area.--731 sq mi.
Records available.--July to November 1909 (gage heights only, for November), July 1922 to September 1953. Prior to October 1952, discharge measurements made at site half a mile downstream; low discharges not equivalent due to local inflow.
Gage.--Water-stage recorder. Datum of gage is 44 ft above mean sea level, unadjusted (levels by Pacific Power & Light Co.). July to November 1909 staff gage at site 4 miles (corrected) upstream at different datum. July 27 to Oct. 28, 1922, and July 31, 1923, to Apr. 20, 1930, staff gages at site half a mile downstream, at datums 3.90 ft and 0.90 ft higher, respectively, than present datum.
Average discharge.--30 years (1923-53), 4,596 cfs (adjusted for storage in Lake Merwin since March 1931, and Yale Reservoir since August 1952).
Extremes.--Maximum discharge during year, 47,800 cfs Jan. 17 (gage height, 19.20 ft); minimum not determined, probably occurred sometime during July, August, or September when river surface was below intake; minimum daily, 630 cfs Dec. 18.
1909, 1922-53: Maximum discharge, 129,000 cfs Dec. 22, 1933 (gage height, 35.0 ft, from floodmarks), from rating curve extended above 56,000 cfs on basis of computation of peak flow over dam; no flow at times June 30, July 1-3, 6-9, 1931 (caused by regulation during construction of Ariel Dam); minimum daily discharge, 1 cfs July 6, 1931.
Remarks.--Records good except those for periods of faulty intake action, which are fair. No diversion. Flow regulated by Lake Merwin and Yale Reservoir at the head of backwater from Lake Merwin. Records of water temperatures for the water year 1953 are given in WSP 1293.
Cooperation.--Gage-height record collected in cooperation with Pacific Power & Light Co.
Revisions (water years).--WSP 884: 1938. WSP 984: 1936-37, 1940-42.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	686	746	698	675	25,000	7,030	5,190	2,670	6,050	3,910	e641	1,700
2	680	728	698	766	19,600	7,100	5,060	2,590	6,180	4,490	e641	1,470
3	680	740	728	680	25,300	7,520	5,100	2,200	5,500	4,320	1,790	e832
4	698	758	716	665	19,800	7,290	5,410	2,840	5,760	2,150	1,960	e644
5	686	752	710	2,190	16,900	7,320	4,880	3,040	5,110	2,480	1,990	e857
6	680	764	692	3,380	15,500	6,600	4,790	3,160	*4,810	*4,040	1,860	e641
7	670	770	680	*3,410	15,800	5,030	5,640	3,160	5,350	4,270	1,740	e671
8	675	758	774	4,160	14,400	4,730	5,660	3,250	6,170	4,160	1,140	1,410
9	675	764	680	5,560	12,500	4,990	5,100	3,140	6,430	4,670	e641	1,460
10	686	842	670	7,720	10,600	4,930	5,530	3,100	6,490	4,610	e953	e688
11	680	891	660	11,500	9,030	4,850	5,530	3,290	5,170	2,590	1,600	2,270
12	686	890	791	32,800	7,860	4,720	5,060	3,280	6,090	1,380	*1,280	1,920
13	686	963	655	*27,500	7,430	4,920	5,320	3,360	7,280	3,200	1,660	1,680
14	698	933	707	21,300	7,380	5,070	4,820	3,360	6,900	3,010	1,560	2,740
15	686	734	727	18,600	7,280	4,770	4,450	3,340	5,360	2,890	e641	2,620
16	665	740	722	27,100	7,430	4,770	4,370	6,250	5,820	2,880	e641	2,580
17	670	1,130	650	37,600	7,450	5,350	4,110	3,320	6,230	2,880	1,610	2,470
18	670	828	630	38,800	7,360	5,630	3,170	5,000	6,670	2,180	1,590	2,680
19	660	1,020	650	37,100	7,500	5,630	2,360	4,410	6,350	e691	1,330	*2,510
20	686	*1,060	650	27,500	7,320	5,710	4,150	5,580	5,720	2,980	1,280	2,180
21	686	938	650	21,200	7,330	5,460	3,680	4,740	4,820	2,220	1,340	3,160
22	716	*1,160	739	22,600	7,090	4,650	4,080	4,710	5,330	2,250	e641	3,180
23	716	675	680	27,800	7,350	5,360	3,960	4,320	4,110	1,800	e639	3,130
24	728	1,800	680	20,900	7,340	5,990	3,940	4,060	3,530	2,290	1,330	3,290
25	740	1,060	670	19,400	7,060	5,640	3,620	5,870	3,280	1,500	1,610	5,270
26	734	1,770	680	16,400	7,380	*5,360	3,550	6,060	3,250	e691	2,410	4,870
27	728	704	692	13,800	7,380	5,810	4,040	5,950	2,500	1,910	3,200	4,040
28	710	1,070	670	13,600	7,210	4,940	4,300	5,810	1,310	2,130	3,340	5,710
29	716	906	849	14,700	-	4,360	2,500	6,030	3,130	2,290	2,780	5,330
30	746	692	823	15,900	-	5,250	2,330	5,560	3,970	2,300	1,590	5,920
31	740	-	816	20,100	-	5,630	-	5,390	-	2,020	1,890	-
Total	21,563	27,606	21,837	515,406	309,580	172,410	131,700	128,840	154,670	85,182	47,318	77,923
Mean	696	920	704	16,630	11,060	5,562	4,390	4,156	5,156	2,748	1,526	2,597
Ac-ft	42,770	54,760	43,310	‡1,022	614,000	342,000	261,200	255,600	306,800	169,000	93,850	154,600
(†)	+250	-5,690	+165,600	+130,900	-93,180	-45,650	+28,580	+167,800	+8,330	-1,550	-2,860	-72,100
Adjusted for change in reservoir contents												
Mean	700	825	3,397	18,750	9,377	4,820	4,870	6,886	5,295	2,723	1,480	1,386
Cfsm	0.958	1.13	4.65	25.6	12.8	6.59	6.66	9.42	7.24	3.73	2.02	1.90
In.	1.10	1.26	5.36	29.57	13.36	7.60	7.43	10.86	8.08	4.29	2.33	2.12
Ac-ft	43,020	49,070	208,900	‡1,153	520,800	296,400	289,800	423,400	315,100	167,400	90,990	82,500

Observed.

Calendar year 1952: Max 18,500 Min 630 Mean 3,147 Ac-ft 2,284,000
Water year 1952-53: Max 38,800 Min 630 Mean 4,641 Ac-ft 3,360,000

Adjusted

Calendar year 1952: Mean 3.492 Cfsm 4.78 In. 65.03 Ac-ft 2,535,000
Water year 1952-53: Mean 5,028 Cfsm 6.88 In. 93.36 Ac-ft 3,640,000

* Discharge measurement made on this day.
† Change in contents, in acre-feet, in Lake Merwin and Yale Reservoir. Records for Yale Reservoir furnished by Pacific Power & Light Co.
‡ Expressed in thousands.
e Intake action faulty; discharge estimated on basis of power records at dam.

Cedar Creek near Ariel, Wash.

Location.--Lat 45°55'50", long. 122°31'40", in W½ sec. 11. T. 5 N., R. 2 E., on right bank at downstream side of highway bridge, 1½ miles upstream from Pup Creek and 2½ miles southeast of Ariel.

Drainage area.--41.3 sq mi.

Records available.--June 1951 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 290 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,720 cfs Jan. 22 (gage height, 7.21 ft); minimum, 7.2 cfs Oct. 6, 7, 18; minimum gage height, 1.65 ft Nov. 25.
1951-53: Maximum discharge, that of Jan. 22, 1953; minimum, 4.6 cfs Sept. 16, 1951; minimum gage height, that of Nov. 25, 1952.

Remarks.--Records good except those for period of ice effect, which are fair. No regulation. Some diversion for domestic use and irrigation above station.

Rating tables, water year 1952-53, except period of ice effect (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-9, 22-26, Jan. 11-18)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
1.7	10.5	3.5	255	1.6	7	3.5	289
1.9	24	4.0	365	1.8	20	4.0	415
2.2	51	5.0	645	2.2	58	5.0	724
2.6	98	6.0	1,000	2.6	112	6.0	1,130
3.0	160	7.0	1,450	3.0	182	7.0	1,620

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	14.5	15.5	153	801	147	294	110	163	69	21	18.5
2	9.4	13	30	242	767	142	276	112	152	63	20	18
3	8.8	12.5	52	249	959	136	264	108	142	60	20	16.5
4	8.3	10.5	89	226	875	126	236	102	*131	57	21	14.5
5	7.8	9.4	86	208	820	120	223	96	131	*54	21	13.5
6	7.2	9.4	77	193	731	114	206	*94	150	50	24	13
7	7.2	9.4	122	*251	669	108	178	106	350	46	22	13.5
8	8.3	9.4	120	362	559	103	176	112	294	44	20	13.5
9	*9.4	10	99	448	484	100	174	108	255	41	18.5	13
10	9.4	15.5	202	444	420	97	152	98	236	38	18	12.5
11	8.8	21	145	591	367	109	145	91	210	38	*17	12.5
12	9.4	19	160	612	323	122	159	84	198	37	16.5	12
13	9.4	22	135	606	287	112	147	84	186	37	15	12
14	9.4	24	114	528	262	100	136	82	159	38	15	12.5
15	9.4	20	101	534	266	114	126	80	152	37	15	12
16	9.4	15.5	92	920	352	222	120	78	140	36	16	12
17	9.8	14	83	1,120	327	229	125	76	128	33	16	*12
18	8.3	13	77	1,420	*289	236	112	102	120	32	16.5	12
19	10	*13	78	1,320	266	236	108	102	130	32	15	12
20	10.5	12.5	71	1,200	*257	231	103	98	136	31	15	12
21	10.5	11.5	86	979	240	262	96	120	117	30	15	12
22	10.5	11.5	157	1,250	242	362	100	128	104	28	15	12.5
23	10.5	11.5	121	1,400	217	370	106	128	97	29	15	13
24	12.5	11	105	1,110	202	370	98	158	91	27	19.5	12.5
25	10.5	10.5	97	1,040	188	*362	90	140	87	26	22	12
26	9.4	11.5	94	935	174	332	93	189	83	26	48	12
27	9.4	11	93	793	165	342	133	231	86	26	55	13
28	9.4	b10	107	987	156	362	110	202	87	24	36	22
29	11.5	b10.5	157	979	-	315	110	194	79	24	27	18.5
30	15.5	b12	153	831	-	340	114	204	73	22	23	34
31	14.5	-	150	860	-	308	-	176	-	22	21	-
Total	304.4	398.6	3,268.5	22,791	11,665	6,629	4,509	3,793	4,467	1,157	659.0	429.0
Mean	9.82	13.3	105	735	417	214	150	122	149	37.3	21.3	14.3
Cfsm	0.238	0.322	2.54	17.8	10.1	5.18	3.63	2.95	3.61	0.903	0.516	0.346
In.	0.27	0.36	2.94	20.52	10.50	5.97	4.06	3.42	4.02	1.04	0.59	0.39
Ac-ft	604	791	6,480	45,210	23,140	13,150	8,940	7,520	8,860	2,290	1,310	851

Calendar year 1952: Max 1,050 Min 7.2 Mean 102 Cfsm 2.47 In. 33.60 Ac-ft 74,000
Water year 1952-53: Max 1,420 Min 7.2 Mean 165 Cfsm 4.00 In. 54.08 Ac-ft 119,100

Peak discharge (base, 850 cfs).--Jan. 18 (4 p.m.) 1,640 cfs (7.03 ft); Jan. 22 (8:30 p.m.) 1,720 cfs (7.21 ft); Jan. 28 (7 p.m.) 1,700 cfs (7.16 ft); Jan. 31 (6:30 p.m.) 1,040 cfs (5.80 ft); Feb. 3 (9:30 a.m.) 1,060 cfs (5.85 ft).

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

East Fork Lewis River near Heisson, Wash.

Location.--Lat 45°50', long. 122°28', in N½ sec. 17, T. 4 N., R. 3 E., on right bank 60 ft downstream from Basket Creek, 1½ miles northeast of Heisson, and 20 miles upstream from mouth.

Drainage area.--125 sq mi.

Records available.--September 1929 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 366.8 ft above mean sea level (from river-profile surveys).

Average discharge.--24 years, 731 cfs.

Extremes.--Maximum discharge during year, 9,350 cfs Jan. 18 (gage height, 9.67 ft), from rating curve extended above 4,600 cfs; minimum not determined, probably occurred sometime during period of no gage-height record in October.
1929-53: Maximum discharge, 15,600 cfs Dec. 22, 1933 (gage height, 12.3 ft), from rating curve extended above 12,000 cfs; minimum, 29 cfs Nov. 3, 1935 (gage height, 0.04 ft).

Remarks.--Records good except those for period of no gage-height record, which are fair. No diversion or regulation. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.0	28	3.0	750
.2	39	3.5	1,000
.5	64	4.0	1,320
.8	97	5.0	2,130
1.1	140	6.0	3,230
1.5	222	7.0	4,570
2.0	362	8.0	6,170
2.5	535	9.0	7,990

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	53	61	842	3,770	493	948	827	667	229	87	132
2	37	46	123	1,900	2,770	461	842	784	599	217	86	114
3	36	41	201	2,630	4,180	444	760	712	539	213	86	97
4	35	40	541	1,700	3,300	424	698	703	*486	199	93	92
5	35	40	635	*1,220	2,870	414	676	731	475	*186	91	86
6	34	38	419	933	3,040	407	645	*680	574	176	101	84
7	34	35	867	1,250	2,830	410	594	662	1,040	166	98	84
8	*34	36	803	3,000	2,250	461	586	658	1,080	166	90	85
9	36	38	562	5,020	1,700	527	547	628	936	153	86	82
10	38	40	1,300	2,950	1,350	531	505	578	798	145	*81	78
11	40	76	1,070	3,580	1,080	614	501	535	694	138	72	71
12	42	87	2,670	4,080	912	798	547	490	645	137	76	70
13	38	126	1,720	3,280	798	662	539	465	619	134	68	71
14	35	135	1,020	2,660	750	578	516	458	516	144	67	69
15	32	106	726	2,410	722	668	497	437	472	135	64	68
16	32	72	554	5,090	1,190	1,800	508	414	427	127	72	*66
17	35	60	451	6,760	1,460	1,520	558	391	404	124	68	67
18	33	55	384	7,820	*1,170	1,260	543	539	375	123	65	64
19	35	*51	352	5,920	964	1,170	685	611	394	121	63	63
20	38	50	309	4,560	852	1,110	793	607	407	118	65	63
21	40	49	324	3,560	755	1,170	793	849	362	111	68	56
22	42	46	590	4,180	741	2,190	760	1,170	330	109	63	57
23	48	45	539	5,690	654	2,480	899	1,060	312	109	59	63
24	60	45	447	3,470	611	*2,450	788	1,200	303	106	98	61
25	50	45	391	3,410	574	2,070	680	1,050	292	104	126	56
26	38	47	349	2,970	551	1,520	694	1,050	275	104	300	57
27	34	42	330	2,360	524	1,220	1,040	1,650	272	100	570	59
28	36	39	342	2,740	531	1,140	1,000	1,380	280	96	330	112
29	40	42	547	3,410	-	969	877	1,100	264	92	232	80
30	71	47	974	3,400	-	1,070	887	912	249	92	168	252
31	66	-	964	4,480	-	1,070	-	774	-	92	145	-
Total	1,243	1,672	20,565	107,275	42,899	32,101	20,906	24,105	15,088	4,266	3,738	2,459
Mean	40.1	55.7	663	3,460	1,532	1,036	697	778	503	138	121	82.0
Cfsm	0.321	0.446	5.30	27.7	12.3	8.29	5.58	6.22	4.02	1.10	0.968	0.656
In.	0.37	0.50	6.12	31.92	12.76	9.55	6.22	7.17	4.49	1.27	1.11	0.73
Ac-ft	2,470	3,320	40,790	212,800	85,090	63,670	41,470	47,810	29,930	8,460	7,410	4,880

Calendar year 1952: Max 6,170 Min 32 Mean 479 Cfsm 3.83 In. 52.14 Ac-ft 347,600
Water year 1952-53: Max 7,820 Min 32 Mean 757 Cfsm 6.06 In. 82.21 Ac-ft 548,100

Peak discharge (base, 6,100 cfs).--Jan. 18 (2:30 p.m.) 9,350 cfs (9.67 ft); Jan. 23 (1:30 a.m.) 6,960 cfs (8.45 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Oct. 9-26, 28, 29, Nov. 8, 9; discharge estimated on basis of records for stations on nearby streams.

Kalama River below Italian Creek, near Kalama, Wash.

Location.--Lat 46°02'30", long. 122°49'00", in NE¼SW¼ sec. 33, T. 7 N., R. 1 W., on right bank 2½ miles northeast of Kalama, 3 miles upstream from mouth, and 5 miles downstream from Italian Creek.

Drainage area.--201 sq mi.

Records available.--September 1946 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is about 20 ft (from topographic map). Prior to Oct. 7, 1952, staff gage and crest-stage indicator at site about 70 ft downstream at same datum; gage read twice daily.

Average discharge.--7 years, 1,258 cfs.

Extremes.--Maximum discharge during year, 9,660 cfs Jan. 18 (gage height, 10.94 ft); minimum, 174 cfs Nov. 8, 9; minimum gage height observed, 1.88 ft Oct. 1, 2, 3, 4, 5, 6, at former site.

1946-53: Maximum discharge observed, 14,400 cfs Dec. 13, 1946 (gage height, 13.40 ft), from rating curve extended above 6,700 cfs by logarithmic plotting; minimum, that of Nov. 8, 9, 1952; minimum gage height observed, 1.76 ft Sept. 13, 1951.

Remarks.--Records good except those for period of shifting control, which are fair. No known diversion or regulation.

Rating table, water year 1952-53, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

2.0	150	5.0	2,320
2.5	380	6.0	3,250
3.0	675	7.0	4,350
3.5	1,030	8.0	5,550
4.0	1,430	9.0	6,850
4.5	1,870	10.0	8,250

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	194	222	226	1,380	5,420	918	1,420	1,300	1,050	604	350	370
2	201	204	305	1,980	3,920	880	1,300	1,210	985	592	350	355
3	194	194	462	2,820	4,850	845	1,210	1,130	932	586	345	335
4	194	186	1,550	2,300	4,400	817	1,130	1,140	888	568	350	320
5	194	186	1,770	1,860	3,650	796	1,080	1,280	873	568	350	305
6	194	186	1,420	1,580	3,350	768	1,050	1,400	1,000	556	355	300
7	194	182	2,140	2,040	3,850	754	992	1,370	*1,480	*556	350	300
8	194	174	1,960	3,580	3,430	782	978	1,340	1,720	556	335	300
9	204	174	1,460	*5,760	2,750	866	925	1,180	1,490	526	335	290
10	*204	190	2,150	4,300	2,310	978	888	1,040	1,320	502	325	285
11	204	285	1,680	4,710	1,980	1,100	873	948	1,190	490	320	285
12	204	325	3,160	5,370	1,740	1,330	910	880	1,130	479	*310	285
13	199	408	2,840	5,260	1,560	1,160	895	880	1,050	474	305	276
14	194	502	2,100	3,810	1,460	1,030	859	888	940	496	300	276
15	190	440	1,640	3,340	1,450	1,090	824	859	880	474	295	271
16	190	340	1,330	5,910	2,000	*2,270	831	824	859	452	300	271
17	186	300	1,130	7,420	2,220	2,210	873	803	831	440	295	271
18	186	266	985	7,980	*1,860	2,010	866	1,000	796	430	290	*266
19	186	253	895	*8,210	1,580	1,880	918	1,370	796	424	290	266
20	190	244	817	6,540	1,450	1,700	1,050	1,230	782	418	290	266
21	194	230	838	5,200	1,330	1,640	1,150	1,390	740	408	290	266
22	190	226	1,180	5,750	1,280	1,880	1,130	1,530	694	402	280	271
23	190	*222	1,110	8,540	1,170	2,200	1,270	1,510	675	396	280	280
24	244	212	955	5,480	1,110	2,360	1,280	1,580	682	386	315	280
25	204	208	852	4,640	1,050	2,360	*1,140	1,430	688	386	345	285
26	186	204	782	3,970	992	2,010	1,210	1,380	682	386	446	290
27	186	199	747	3,340	970	1,820	2,020	1,740	675	375	592	266
28	182	190	754	3,760	955	1,900	1,940	1,560	668	370	538	424
29	194	194	1,060	4,550	-	1,740	1,520	1,440	636	365	468	370
30	248	199	1,450	4,520	-	1,710	1,420	1,290	623	360	418	607
31	248	-	1,490	5,060	-	1,560	-	1,170	-	360	386	-
Total	6,162	7,345	41,238	140,940	64,087	45,364	33,952	38,092	27,755	14,385	10,798	9,232
Mean	199	245	1,330	4,546	2,289	1,463	1,132	1,229	925	464	348	308
Cfsm	0.990	1.22	6.62	22.6	11.4	7.28	5.63	6.11	4.60	2.31	1.73	1.53
In.	1.14	1.36	7.63	26.08	11.86	8.39	6.28	7.05	5.14	2.66	2.00	1.71
Ac-ft	12,220	14,570	81,790	279,600	127,100	89,980	67,340	75,550	55,050	28,530	21,420	18,310

Calendar year 1952: Max 7,980 Min 174 Mean 859 Cfsm 4.27 In. 58.20 Ac-ft 623,700
Water year 1952-53: Max 8,540 Min 174 Mean 1,204 Cfsm 5.99 In. 81.30 Ac-ft 871,500

Peak discharge (base, 6,000 cfs).--Jan. 9 (7:30 p.m.) 6,280 cfs (8.56 ft); Jan. 11 (7:15 p.m.) 6,330 cfs (8.60 ft); Jan. 18 (7 p.m.) 9,660 cfs (10.94 ft); Jan. 23 (5 a.m.) 9,620 cfs (10.91 ft); Jan. 31 (10:30 p.m.) 6,810 cfs (8.97 ft).

* Discharge measurement made on this day.

Note.--Shifting-control method used Oct. 1 to Dec. 4.

Lake Creek near Packwood, Wash.

Location.--Lat 46°35'55", long. 121°34'15", in sec. 21, T. 13 N., R. 10 E., on left bank 500 ft downstream from outlet of Packwood Lake and 6 miles east of Packwood.

Drainage area.--18.8 sq mi.

Records available.--September 1911 to September 1924, September 1930 to October 1942, October 1949 to September 1953. Published as "at outlet of Packwood Lake, near Lewis" 1911-24.

Gage.--Water-stage recorder. Altitude of gage is 2,850 ft (from topographic map). Prior to Aug. 3, 1918, staff gages at several sites at or within 100 ft of present site at various datums. Aug. 3, 1918, to Sept. 30, 1924, water-stage recorder at site 110 ft upstream at different datum.

Average discharge.--29 years, 99.8 cfs.

Extremes.--Maximum discharge during year, 448 cfs Feb. 1 (gage height, 3.86 ft); minimum, 18 cfs Nov. 30, Dec. 1, 2 (gage height, 1.51 ft).
1911-24, 1930-42, 1949-53: Maximum discharge, 1,400 cfs Dec. 22, 1933 (gage height, 5.9 ft); minimum, that of Nov. 30, Dec. 1, 2, 1952.
Maximum stage recorded, 6.0 ft Dec. 18, 1917, datum then in use (discharge not determined).

Remarks.--Records good. No diversion. Natural regulation in Packwood Lake.

Revisions (water years).--WSP 394: 1912. WSP 739: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.5	18	2.7	145
1.7	29	3.1	232
1.9	44	3.5	340
2.1	63	4.0	495
2.4	99		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	32	18	24	436	58	51	133	142	145	109	62
2	34	30	*18.5	31	340	56	48	119	136	156	107	60
3	34	28	19.5	38	294	55	48	107	133	185	109	56
4	33	27	25	36	262	54	47	109	133	208	106	52
5	33	26	26	34	213	53	47	136	133	218	106	50
6	32	25	26	30	185	52	47	199	136	247	114	50
7	32	25	27	33	185	51	46	237	151	294	118	50
8	32	24	29	42	177	51	49	225	158	349	112	50
9	32	23	30	81	154	52	*48	190	153	334	103	48
10	*31	23	33	95	140	*54	46	158	153	294	96	*46
11	30	25	33	116	124	57	44	136	166	270	92	45
12	30	25	42	177	113	59	47	122	213	270	91	48
13	29	27	39	172	105	58	50	*119	308	265	90	48
14	29	26	36	147	99	55	48	120	278	257	86	45
15	28	25	33	128	98	54	44	122	244	250	89	44
16	28	24	30	145	99	55	42	126	230	220	90	42
17	28	23	28	208	96	57	42	136	225	201	84	40
18	28	22	27	286	89	55	43	149	225	203	79	38
19	27	22	25	331	80	53	46	181	*203	196	79	37
20	27	21	24	260	76	51	51	190	177	174	81	36
21	28	21	24	203	72	48	60	174	156	162	78	35
22	27	20	28	172	71	53	67	153	145	154	71	35
23	27	20	26	*227	67	54	84	136	140	151	66	35
24	27	20	24	237	64	55	87	131	138	142	67	35
25	27	19.5	22	220	62	60	87	122	136	133	67	34
26	26	19	21	185	60	58	90	119	136	126	*66	33
27	25	18.5	21	158	59	55	122	126	136	122	80	35
28	25	18.5	21	142	59	54	170	136	138	120	94	55
29	25	18.5	24	136	-	53	166	149	138	119	85	58
30	30	18	25	145	-	53	151	156	143	*119	75	76
31	32	-	24	244	-	53	-	149	-	116	68	-
Total	910	696.0	829.0	4,483	3,879	1,686	2,018	4,565	5,103	6,200	2,758	1,378
Mean	29.4	23.2	26.7	145	139	54.4	67.3	147	170	200	89.0	45.9
Cfsm	1.56	1.23	1.42	7.71	7.39	2.89	3.58	7.82	9.04	10.6	4.73	2.44
In.	1.80	1.38	1.64	8.87	7.67	3.34	3.99	9.03	10.09	12.26	5.46	2.73
Ac-ft	1,800	1,380	1,640	8,890	7,690	3,340	4,000	9,050	10,120	12,300	5,470	2,730

Calendar year 1952: Max 271 Min 18 Mean 75.1 Cfsm 3.99 In. 54.37 Ac-ft 54,520
Water year 1952-53: Max 436 Min 18 Mean 94.5 Cfsm 5.03 In. 68.26 Ac-ft 68,410

* Discharge measurement made on this day.

Cowlitz River at Packwood, Wash.

Location.--Lat 46°36'40", long. 121°40'45", in SE¼ sec. 16, T. 13 N., R. 9 E., on right bank 100 ft upstream from Forest Service bridge, half a mile upstream from Skate Creek, and half a mile northwest of Packwood.

Drainage area.--287 sq mi.

Records available.--July 1911 to December 1919, September 1929 to September 1953. Published as "at Lewis" 1911-19.

Gage.--Water-stage recorder. Datum of gage is 1,048.0 ft (revised) above mean sea level, datum of 1929, supplementary adjustment of 1947. July 1, 1911, to Dec. 31, 1919, staff gages at sites about 1 mile upstream at different datums. Sept. 30, 1929, to Jan. 2, 1930, staff gage at present site and datum.

Average discharge.--32 years, 1,597 cfs.

Extremes.--Maximum discharge during year, 12,500 cfs Jan. 31 (gage height, 9.82 ft); minimum, 130 cfs Nov. 29 (gage height, 2.55 ft).
1911-19, 1929-53: Maximum discharge, 36,600 cfs Dec. 21, 1933 (gage height, 13.0 ft), from rating curve extended above 12,600 cfs; minimum, that of Nov. 29, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No diversion or regulation.

Revisions (water years).--WSP 884: 1938.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 20 to Sept. 30)

2.6	144	5.0	1,630
2.8	201	5.5	2,310
3.4	410	6.0	3,120
3.7	545	6.5	4,020
4.0	725	7.0	5,010
4.3	950	8.0	7,340
4.6	1,210	9.0	10,000

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a390	248	164	332	8,080	718	788	1,980	2,510	2,490	1,290	680
2	a400	229	158	486	4,520	692	753	1,740	2,570	3,100	1,370	673
3	a390	220	*172	1,110	4,480	680	732	1,710	2,570	3,670	1,390	654
4	*a380	216	204	870	3,850	673	718	2,200	2,650	3,540	1,300	636
5	a380	216	216	706	3,000	648	725	3,420	2,620	3,520	1,230	654
6	a380	207	201	642	2,700	636	712	4,520	2,730	4,100	1,400	686
7	*a380	207	207	666	3,290	642	692	4,540	3,220	4,700	1,340	692
8	386	204	216	1,260	3,020	699	*692	3,580	3,090	5,640	1,290	660
9	370	195	213	6,310	2,380	832	660	2,810	2,760	4,500	1,150	*618
10	374	201	226	4,150	1,990	918	630	2,320	2,830	4,100	1,130	600
11	363	248	229	7,360	1,700	*966	636	2,030	3,400	4,120	1,120	624
12	356	232	816	8,110	1,500	966	630	2,050	4,360	4,080	1,130	781
13	349	223	894	5,530	1,350	934	618	2,150	4,900	3,830	1,090	712
14	314	216	636	3,610	1,260	870	600	*2,670	3,740	3,650	1,080	660
15	300	210	510	2,680	1,180	848	594	2,590	3,510	3,140	1,150	648
16	296	198	434	2,860	1,160	862	612	2,760	3,430	2,590	1,120	556
17	310	192	398	4,400	1,110	832	660	3,090	*3,740	2,680	990	486
18	324	189	360	7,060	1,030	802	725	*3,420	3,470	2,700	1,010	482
19	304	192	332	6,600	982	767	942	4,320	2,850	2,440	1,080	495
20	307	192	310	4,500	966	739	1,440	3,470	2,480	2,160	1,090	490
21	*328	189	296	*3,400	966	718	1,980	2,900	2,300	2,090	926	495
22	318	181	304	3,000	950	725	2,480	2,460	2,310	2,080	825	500
23	304	175	276	6,070	886	760	2,970	2,160	2,250	1,920	802	486
24	318	172	252	5,350	832	918	2,900	2,020	2,190	1,800	746	450
25	265	169	235	4,120	795	1,020	2,540	1,850	2,220	1,690	712	430
26	248	161	245	3,150	774	974	2,640	1,940	2,250	1,560	712	418
27	242	161	235	2,560	753	942	3,760	2,620	2,320	1,530	1,010	430
28	245	147	239	2,220	746	934	3,700	2,880	2,340	1,500	934	718
29	248	144	258	2,340	-	878	2,810	3,310	2,360	1,510	760	540
30	286	155	321	3,070	-	878	2,310	3,070	2,560	*1,520	706	970
31	268	-	338	8,660	-	840	-	2,620	-	1,340	699	-
Total	10,123	5,889	9,895	113,182	56,250	25,311	42,649	85,200	86,530	89,290	32,562	17,924
Mean	327	196	319	3,651	2,009	816	1,422	2,748	2,884	2,880	1,050	597
Cfsm	1.14	0.683	1.11	12.7	7.00	2.84	4.95	9.57	10.0	10.0	3.66	2.08
In.	1.31	0.76	1.28	14.67	7.29	3.28	5.53	11.04	11.21	11.57	4.22	2.32
Ac-ft	20,080	11,630	19,630	224,500	111,600	50,200	84,590	169,000	171,600	177,100	64,590	35,550

Calendar year 1952: Max 5,590 Min 144 Mean 1,227 Cfsm 4.28 In. 58.20 Ac-ft 890,900
Water year 1952-53: Max 8,660 Min 144 Mean 1,575 Cfsm 5.49 In. 74.48 Ac-ft 1,140,000

Peak discharge (base, 8,000 cfs).--Jan. 11 (8 p.m.) 11,200 cfs (9.40 ft); Jan. 31 (8 p.m.) 12,500 cfs (9.82 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of 4 discharge measurements and records for station near Kosmos.

Johnson Creek below Glacier Creek, near Packwood, Wash.

Location.--Lat 46°32'30", long. 121°37'15", in sec. 12, T. 12 N., R. 9 E., near right bank 4½ miles upstream from mouth and 5 miles southeast of Packwood.

Drainage area.--42.8 sq mi.

Records available.--July 1951 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 1,980 ft (from topographic map).

Extremes.--Maximum discharge during year, 894 cfs Jan. 31 (gage height, 5.82 ft), from rating curve extended above 400 cfs; minimum, 21 cfs about Nov. 27 to Dec. 2 (gage height, 2.85 ft, from recorded range in stage).
1951-53: Maximum discharge, that of Jan. 31, 1953; minimum, 21 cfs about Nov. 27 to Dec. 2, 1952 (gage height, 2.85 ft, from recorded range in stage).

Remarks.--Records good except those for periods of no gage-height record, which are poor. No known diversion. No regulation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

2.8	19	4.1	168
3.0	28	4.4	243
3.2	41	4.8	371
3.5	71	5.2	534
3.8	111	5.6	750

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	29	26	21	33	679	96	100	252	310	272	113	60
2	28	25	21	55	498	93	98	227	300	306	113	60
3	28	24	*22	81	553	91	96	224	290	346	108	57
4	*28	23	31	67	489	90	92	275	290	346	102	56
5	28	23	28	60	428	87	92	424	290	354	102	54
6	27	23	26	55	408	86	91	520	300	397	108	53
7	27	23	28	57	439	84	*90	512	320	428	100	52
8	27	23	26	112	404	91	88	424	340	464	96	51
9	27	23	26	428	350	*106	86	350	340	401	93	49
10	26	23	28	320	303	116	84	300	350	360	90	48
11	26	24	31	512	266	121	83	272	400	346	87	*46
12	26	25	76	582	243	120	83	*260	500	343	86	46
13	26	26	67	439	216	113	82	250	640	323	83	46
14	26	25	57	320	204	108	79	260	480	303	79	45
15	26	25	49	258	184	104	78	270	420	275	81	44
16	26	24	44	320	177	104	83	290	*408	249	78	43
17	25	24	40	512	166	100	88	310	431	243	76	42
18	25	23	38	720	153	96	93	350	404	238	75	41
19	24	23	35	624	141	93	121	420	357	214	73	40
20	25	23	34	468	136	93	164	410	323	194	73	40
21	*26	23	33	*382	128	90	206	370	297	186	69	39
22	25	22	33	364	123	91	238	330	284	180	67	39
23	25	22	32	582	116	96	288	300	275	170	67	40
24	26	22	31	489	111	128	291	280	269	162	67	39
25	24	22	30	439	108	139	281	260	266	153	66	38
26	24	22	30	357	104	130	300	270	263	143	67	38
27	24	21	29	300	104	125	408	280	260	136	75	39
28	24	21	29	272	100	120	428	310	260	132	75	51
29	24	21	30	278	-	113	357	350	263	*130	69	43
30	28	21	39	316	-	111	297	340	269	125	66	66
31	26	-	35	665	-	105	-	320	-	118	62	-
Total	806	695	1,079	10,467	7,331	3,240	4,965	10,010	10,199	8,037	2,566	1,405
Mean	26.0	23.2	34.8	338	262	105	166	323	340	259	82.8	46.8
Cfsm	0.607	0.542	0.813	7.90	6.12	2.45	3.88	7.55	7.94	6.05	1.93	1.09
In.	0.70	0.60	0.94	9.10	6.37	2.82	4.31	8.70	8.86	6.98	2.23	1.22
Ac-ft	1,600	1,380	2,140	20,760	14,540	6,430	9,850	19,850	20,230	15,940	5,090	2,790

Calendar year 1952: Max 520 Min 21 Mean 123 Cfsm 2.87 In. 39.13 Ac-ft 89,350
Water year 1952-53: Max 720 Min 21 Mean 167 Cfsm 3.90 In. 52.83 Ac-ft 120,600

Peak discharge (base, 540 cfs).--Jan. 11 (5 p.m.) 673 cfs (5.47 ft); Jan. 18 (7 p.m.) 750 cfs (5.60 ft); Jan. 23 (7 to 8 a.m.) 613 cfs (5.36 ft); Jan. 31 (6:30 p.m.) 894 cfs (5.82 ft); May 7 (3 a.m.) 548 cfs (5.23 ft); about June 13 (time and discharge unknown).
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 3 to Dec. 2, May 13 to June 14; discharge estimated on basis of records for Lake Creek near Packwood.

Niggerhead Creek near Randle, Wash.

Location.--Lat 46°25'45", long. 121°49'45", in SE¼ sec. 20, T. 11 N., R. 8 E., on left bank 1 mile upstream from mouth and 8½ miles southeast of Randle.
Drainage area.--66.3 sq mi.
Records available.--June 1950 to October 1953 (discontinued).
Gage.--Water-stage recorder. Altitude of gage is 1,400 ft (from topographic map).
Extremes.--Maximum discharge during period October 1952 to October 1953, 4,150 cfs about Jan. 12 (gage height, 6.00 ft, from high-water mark in well), from rating curve extended above 2,900 cfs; minimum, 24 cfs Nov. 8-10, 26-28, Dec. 1-2; minimum gage height, 0.57 ft Dec. 1-2.
1950-53: Maximum discharge, 4,150 cfs about Jan. 12, 1953 (gage height, 6.00 ft, from high-water mark in well); minimum, that of Nov. 8-10, 26-28, Dec. 1-2, 1952; minimum gage height, that of Dec. 1-2, 1952.
Remarks.--Records excellent except those for period of no gage-height record, which are poor. No diversion or regulation.
Revisions.--WSP 1218: Drainage area.

Rating table, Oct. 1, 1952, to Oct. 14, 1953 (gage height, in feet, and discharge, in cubic feet per second)

0.5	18	2.5	500
.7	35	3.0	780
1.0	70	3.5	1,170
1.3	118	4.0	1,630
1.6	184	5.0	2,740
2.0	300		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	29	25	75	1,280	142	221	486	482	281	92	69
2	29	27	26	120	938	136	210	421	464	307	90	65
3	29	26	29	250	866	132	202	404	455	339	89	61
4	29	26	*81	220	787	128	200	540	455	339	87	58
5	28	26	73	190	679	126	197	858	442	332	86	57
6	28	26	47	170	622	126	192	1,040	451	346	92	56
7	28	25	55	200	728	124	184	962	525	361	87	53
8	28	24	51	400	703	142	179	754	530	372	81	53
9	28	24	45	1,500	590	184	170	585	496	318	80	52
10	28	26	55	1,200	500	205	*162	482	486	281	77	51
11	28	36	50	1,500	429	221	162	412	545	265	74	50
12	27	37	90	2,200	372	*227	160	400	673	253	71	49
13	27	36	120	1,700	332	205	158	442	722	235	69	47
14	26	38	80	1,300	307	192	151	486	595	218	67	47
15	26	33	80	1,100	281	194	147	*468	545	194	66	*46
16	26	30	70	1,000	271	238	153	473	525	174	65	46
17	26	29	63	1,200	253	227	170	530	535	167	64	46
18	26	28	57	1,700	230	216	187	600	496	170	61	45
19	26	28	52	1,800	210	205	262	794	421	160	58	45
20	*26	28	48	1,300	202	197	384	667	361	149	58	44
21	27	28	45	1,100	189	189	486	580	328	138	60	43
22	26	27	50	900	184	192	540	505	307	134	58	43
23	26	26	45	1,100	170	216	661	446	307	126	57	43
24	28	26	40	950	165	328	685	425	294	120	60	43
25	27	25	35	800	158	357	655	396	284	116	62	42
26	26	25	35	650	153	318	722	416	274	109	71	42
27	26	24	35	550	153	290	1,220	565	274	104	87	42
28	25	25	40	*486	151	278	1,150	616	268	102	95	60
29	25	26	70	500	-	262	801	667	274	98	89	49
30	30	26	90	515	-	256	611	638	287	97	78	82
31	30	-	80	944	-	238	-	535	-	*95	73	-
Total	845	840	1,772	27,620	11,903	6,491	11,382	17,593	13,101	6,500	2,304	1,529
Mean	27.3	28.0	57.2	891	425	209	379	568	437	210	74.3	51.0
Cfsm	0.412	0.422	0.863	13.4	6.41	3.15	5.72	8.57	6.59	3.17	1.12	0.769
In.	0.47	0.47	0.99	15.49	6.68	3.64	6.38	9.87	7.35	3.65	1.29	0.86
Ac-ft	1,680	1,670	3,510	54,780	23,610	12,870	22,580	34,900	25,990	12,890	4,570	3,030

Calendar year 1952: Max 1,320 Min 24 Mean 210 Cfsm 3.17 In. 43.05 Ac-ft 152,200
Water year 1952-53: Max 2,200 Min 24 Mean 279 Cfsm 4.21 In. 57.14 Ac-ft 202,100

Peak discharge (base, 1,600 cfs).--About Jan. 12 (time unknown) 4,150 cfs; about Jan. 19 (time and discharge unknown).
* Discharge measurement made on this day.
Note.--No gage-height record Dec. 9 to Jan. 27; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Discharge, in cubic feet per second, 1953

Day	Discharge	Day	Discharge
Oct. 1	126	Oct. 8	58
2	95	9	58
3	80	10	90
4	73	11	80
5	66	12	73
6	64	13	70
7	60	14	*66

* Discharge measurement made on this day.

Cispus River near Randle, Wash.

Location.--Lat 46°26'50", long. 121°51'35", in NW¼ sec. 18, T. 11 N., R. 8 E. (unsurveyed), on left bank 60 ft upstream from bridge to Tower Rock ranger station, 4 miles downstream from North Fork, and 8 miles southeast of Randle.

Drainage area.--321 sq mi (revised).

Records available.--October 1910 to February 1912, September 1929 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 1,221.60 ft (revised) above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Feb. 29, 1912, staff gage at site 1 mile upstream at different datum. Sept. 28 to Oct. 31, 1929, staff gage and Nov. 1, 1929, to Nov. 26, 1949, Oct. 1-24, 1950, water-stage recorder, at site 450 ft upstream at datum 0.26 ft higher.

Average discharge.--25 years (1910-11, 1929-53), 1,294 cfs.

Extremes.--Maximum discharge during year, 7,060 cfs Jan. 11 (gage height, 8.10 ft); minimum, 185 cfs Nov. 29 (gage height, 2.89 ft).
1910-12, 1929-53: Maximum discharge, 20,000 cfs Dec. 22, 1933 (gage height, 12.7 ft, site and datum then in use), from rating curve extended above 8,000 cfs; minimum, 183 cfs Dec. 30, 1936; minimum gage height, 2.55 ft Oct. 25, 1942, site and datum then in use.

Remarks.--Records good. No diversion or regulation. Records of water temperatures for the water year 1953 are given in WSP 1293.

Revisions (water years).--WSP 794: 1934.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11				Jan. 12 to Sept. 30			
2.9	190	3.7	690	3.2	340	5.0	1,960
3.1	305	4.0	920	3.4	460	5.5	2,580
3.4	490			3.7	670	6.0	3,280
Note.--Same as following table above 4.0 ft.				4.0	920	6.5	4,060
				4.3	1,200	7.0	4,930
				4.6	1,510	8.0	6,850

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	329	281	218	371	4,140	758	929	2,180	2,220	1,690	782	546
2	317	263	223	438	3,340	718	884	1,920	2,180	1,780	774	539
3	317	257	240	800	3,190	702	866	1,830	2,150	1,950	774	512
4	311	257	*365	718	3,090	678	848	2,160	2,160	1,980	750	499
5	305	251	383	627	2,740	670	866	2,920	2,160	1,970	734	492
6	305	245	329	568	2,580	655	848	3,640	2,200	2,060	782	486
7	305	245	347	634	2,740	648	814	3,720	2,380	2,150	774	486
8	305	245	329	1,100	2,700	694	*822	3,250	2,400	2,270	734	480
9	*311	240	299	5,130	2,370	806	790	2,680	2,270	2,120	702	466
10	311	257	347	3,800	2,120	884	766	2,300	2,250	1,890	670	460
11	305	293	323	4,950	1,890	*929	766	2,030	2,410	1,820	655	466
12	299	293	470	6,500	1,700	538	766	1,950	2,840	1,810	648	486
13	293	287	588	5,080	1,560	893	750	2,060	3,420	1,750	625	480
14	281	293	516	3,600	1,480	848	726	2,200	2,980	1,700	618	473
15	275	281	458	2,780	1,360	848	710	*2,180	2,770	1,560	640	*430
16	275	257	419	2,820	1,320	956	734	2,260	2,680	1,420	640	430
17	281	257	389	3,550	1,250	920	774	2,480	2,710	1,350	610	394
18	275	251	359	5,330	1,150	893	806	2,680	*2,590	1,350	595	400
19	275	251	341	5,670	1,070	857	1,000	3,250	2,350	1,310	602	406
20	281	251	335	4,500	1,020	839	1,340	2,950	2,140	1,200	610	388
21	287	245	323	3,560	965	814	1,660	2,640	1,960	1,130	581	382
22	275	245	347	3,030	947	830	1,910	2,360	1,850	1,090	546	388
23	275	240	323	3,560	875	875	2,280	2,160	1,840	1,060	546	388
24	287	234	305	3,340	848	1,100	2,480	2,060	1,800	1,010	539	370
25	269	228	287	3,090	822	1,260	2,380	1,910	1,760	974	546	364
26	263	228	281	2,630	798	1,160	2,520	1,900	1,750	938	553	358
27	251	223	281	*2,270	790	1,110	3,550	2,280	1,740	893	625	364
28	251	218	287	2,100	790	1,080	3,840	2,420	1,730	875	662	473
29	251	206	311	2,080	-	1,030	3,070	2,700	1,730	857	610	418
30	287	212	425	2,100	-	1,020	2,540	2,620	1,740	848	560	470
31	293	-	407	2,960	-	974	-	2,360	-	*814	539	-
Total	8,945	7,534	10,855	89,686	49,645	27,387	43,035	76,050	67,160	45,619	20,026	13,294
Mean	289	251	350	2,893	1,773	883	1,434	2,453	2,239	1,472	646	443
Cfsm	0.900	0.782	1.09	9.01	5.52	2.75	4.47	7.64	6.98	4.59	2.01	1.38
In.	1.04	0.87	1.26	10.39	5.75	3.17	4.99	8.81	7.78	5.29	2.32	1.54
Ac-ft	17,740	14,940	21,530	177,900	98,470	54,320	85,360	150,800	133,200	90,480	39,720	26,370

Calendar year 1952: Max 3,630 Min 206 Mean 994 Cfsm †3.10 In. †42.13 Ac-ft 721,300
Water year 1952-53: Max 6,500 Min 206 Mean 1,258 Cfsm 3.92 In. 53.21 Ac-ft 910,800

Peak discharge (base, 3,400 cfs).--Jan. 9 (6 p.m.) 6,130 cfs (7.64 ft); Jan. 11 (8 p.m.) 7,060 cfs (8.10 ft); Jan. 18 (11 p.m.) 6,790 cfs (7.97 ft); Feb. 1 (3 a.m.) 4,400 cfs (6.70 ft); Apr. 28 (12:30 a.m.) 4,160 cfs (6.56 ft); May 7 (6 a.m.) 3,800 cfs (6.34 ft); June 13 (7 a.m.) 3,490 cfs (6.14 ft).

* Discharge measurement made on this day.

† Computed on basis of revised drainage area.

Cowlitz River near Kosmos, Wash.

Location.--Lat 46°28'00", long. 122°07'20", in SE¼ sec. 1, T. 11 N., R. 5 E., on right bank half a mile downstream from Tumwater Creek, 1½ miles downstream from Cispus River, and 4 miles southeast of Kosmos.

Drainage area.--1,042 sq mi.

Records available.--November 1947 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 759.29 ft above mean sea level (levels by city of Tacoma). Prior to Dec. 3, 1948, staff gage at site half a mile upstream at different datum.

Average discharge.--5 years, 5,105 cfs.

Extremes.--Maximum discharge during year, 25,600 cfs Feb. 1 (gage height, 14.56 ft); minimum, 518 cfs Nov. 29 (gage height, 2.34 ft).
1947-53: Maximum discharge, 33,800 cfs Feb. 11, 1951 (gage height, 16.60 ft); minimum, that of Nov. 29, 1952.

Remarks.--Records excellent. No diversion or regulation. Records of water temperatures for the water year 1953 are given in WSP 1293.

Revisions.--WSP 1218: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

2.3	500	5.0	2,380	10.0	10,600
2.6	635	5.5	2,890	11.0	13,200
3.0	845	6.0	3,460	12.0	16,200
3.5	1,160	7.0	4,780	13.0	19,600
4.0	1,530	8.0	6,350	15.0	27,400
4.5	1,930	9.0	8,220		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	978	774	540	1,230	24,400	2,770	3,340	6,860	6,830	5,670	2,710	1,650
2	990	730	550	1,400	19,100	2,640	3,200	6,040	6,670	6,050	2,650	1,630
3	984	695	568	2,560	15,600	2,570	3,110	5,570	6,640	6,900	2,700	1,590
4	960	680	746	3,000	15,200	2,500	3,030	6,070	6,640	7,170	2,640	1,520
5	954	670	*878	2,590	12,400	2,430	2,980	8,330	6,600	6,910	*2,520	1,510
6	954	660	796	2,300	11,100	2,380	2,940	11,700	6,640	7,310	2,570	1,510
7	930	650	845	2,310	11,200	2,350	2,860	12,400	7,330	8,110	2,690	1,540
8	930	640	878	3,060	11,700	2,430	2,860	11,100	7,780	9,180	2,550	1,520
9	906	630	823	11,900	10,000	2,720	2,760	8,990	7,240	8,810	2,430	1,470
10	906	635	918	13,800	8,440	3,060	*2,650	7,360	6,970	7,400	2,310	1,420
11	894	695	900	13,500	7,240	3,290	2,600	6,370	7,500	7,090	2,250	1,400
12	872	740	1,280	22,800	6,580	*3,420	2,650	5,960	9,010	7,040	2,230	1,470
13	862	730	2,410	19,400	5,780	3,320	2,640	6,150	11,600	6,840	2,190	1,590
14	834	735	2,090	15,700	5,300	3,150	2,580	*6,710	10,300	6,420	2,140	*1,500
15	801	715	1,760	10,100	5,000	3,080	2,500	6,840	9,010	6,070	2,160	1,470
16	790	680	1,550	9,980	4,820	3,200	2,520	6,900	8,590	5,260	2,220	1,410
17	790	655	1,400	13,100	4,740	3,210	2,630	7,400	8,700	4,870	2,100	1,300
18	801	645	1,300	19,400	4,390	3,080	2,720	7,920	8,570	5,000	2,010	1,240
19	801	640	1,200	23,000	4,060	3,010	3,040	10,000	7,520	4,780	2,030	1,240
20	796	635	1,130	18,300	3,840	2,920	3,990	9,650	6,710	4,320	2,090	1,220
21	812	635	1,100	14,200	3,650	2,850	5,200	8,370	6,100	4,100	2,030	1,200
22	*812	626	1,200	15,600	3,530	2,940	6,470	7,290	5,830	3,970	1,840	1,220
23	796	612	1,100	14,900	3,320	3,090	7,540	6,520	5,750	3,830	1,790	1,220
24	806	599	1,010	17,100	3,180	3,500	8,620	6,230	5,620	3,640	1,760	1,190
25	790	586	954	14,600	3,070	4,130	7,960	5,780	5,560	3,440	1,760	1,140
26	740	576	918	*11,800	2,960	4,020	7,940	5,620	5,510	3,260	1,710	1,100
27	715	568	906	9,620	2,890	3,920	10,000	6,670	5,480	3,130	1,890	1,100
28	705	554	894	8,660	2,880	3,780	12,100	7,310	5,560	3,040	2,190	1,290
29	710	532	954	8,590	-	3,660	9,980	8,220	5,480	2,980	1,960	1,530
30	735	532	1,200	9,720	-	3,620	8,040	8,290	5,830	2,970	1,750	1,360
31	806	-	1,300	14,000	-	3,560	-	7,440	-	2,850	1,670	-
Total	26,160	19,454	34,098	348,220	216,170	96,600	141,450	236,060	213,570	168,410	67,540	41,550
Mean	844	648	1,100	11,230	7,720	3,116	4,715	7,615	7,119	5,433	2,179	1,385
Cfsm	0.810	0.622	1.06	10.8	7.41	2.99	4.52	7.31	6.83	5.21	2.09	1.33
In.	0.93	0.69	1.22	12.43	7.72	3.45	5.05	8.43	7.62	6.01	2.41	1.48
Ac-ft	51,890	38,590	67,630	690,700	428,800	191,600	280,600	468,200	423,600	334,000	134,000	82,410

Calendar year 1952: Max 12,300 Min 532 Mean 3,363 Cfsm 3.23 In. 43.92 Ac-ft 2,441,000
Water year 1952-53: Max 24,400 Min 532 Mean 4,409 Cfsm 4.23 In. 57.44 Ac-ft 3,192,000

Peak discharge (base, 16,000 cfs).--Jan. 9 (9:45 p.m.) 16,500 cfs (12.09 ft); Jan. 12 (8:30 a.m.) 23,600 cfs (14.06 ft); Jan. 19 (5:20 a.m.) 24,000 cfs (14.15 ft); Jan. 24 (3 a.m.) 18,000 cfs (12.52 ft); Feb. 1 (12:30 p.m.) 25,600 cfs (14.56 ft).

* Discharge measurement made on this day.

Rainy Creek near Kosmos, Wash.

Location.--Lat 46°30'30", long. 122°09'15", at west line sec. 23, T. 12 N., R. 5 E., on left bank 25 ft upstream from county bridge and 2 miles northeast of Kosmos.
Drainage area.--17.5 sq mi.
Records available.--June 1950 to October 1953 (discontinued).
Gage.--Water-stage recorder. Altitude of gage is 800 ft (from topographic map).
Extremes.--Maximum discharge during period October 1952 to October 1953, 552 cfs Jan. 31 (gage height, 4.59 ft); minimum, 0.4 cfs Oct. 15-17, 1952; minimum,gage height, 1.05 ft Oct. 4, 5, 6, 7, 8, 15-17, 1952.
1950-53: Maximum discharge, that of Jan. 31, 1953; minimum, 0.3 cfs Sept. 14-24, 1951; minimum gage height, that of Oct. 4, 5, 6, 7, 8, 15-17, 1952.
Remarks.--Records good except those below 1.0 cfs and those for periods of shifting control, which are fair. No diversion or regulation. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating tables, Oct. 1, 1952, to Oct. 15, 1953, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 31				Feb. 1 to Oct. 15			
1.05	0.4	2.2	75	1.4	3.5	2.6	90
1.1	.8	2.6	124	1.6	8.1	3.0	150
1.3	6.2	3.0	184	1.8	16.5	3.5	255
1.5	15.5	3.5	271	2.0	28	4.0	380
1.7	28	4.0	380	2.3	54	4.5	525
1.9	45	4.5	525				

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.6	1.1	2.9	12	402	55	72	56	50	34	11.5	9.8
2	.6	1.2	4.1	38	280	52	69	53	48	32	11	9.4
3	.6	1.4	5.0	45	265	50	66	50	45	31	10.5	8.7
4	.6	1.2	6.6	36	238	49	63	52	43	29	10.5	7.8
5	.5	1.2	*4.4	30	204	48	62	62	42	27	10.5	7.4
6	.5	1.2	1.6	26	202	46	61	66	42	26	11.5	7.1
7	.5	1.6	2.9	27	196	45	58	65	55	25	11	7.1
8	.5	1.8	4.7	33	182	46	57	64	50	26	10.5	7.1
9	*.6	1.8	4.1	59	156	50	54	63	45	23	10.5	6.8
10	.6	2.0	9.4	57	138	50	52	56	46	22	9.8	6.5
11	.6	2.6	9.4	94	124	53	52	51	43	21	9.4	*6.2
12	.6	3.5	46	104	114	52	55	49	45	20	9.0	6.2
13	.5	3.2	31	94	105	*50	*55	48	56	20	8.7	5.8
14	.5	3.5	21	86	99	48	56	49	51	21	8.4	5.6
15	.5	4.1	15	84	96	46	53	48	47	21	8.4	5.4
16	.4	3.8	11.5	121	102	52	53	45	44	19.5	8.4	5.4
17	.4	3.5	9.4	226	100	53	52	43	41	18	8.1	5.2
18	.5	3.5	7.8	275	89	51	52	45	40	18	7.8	4.6
19	.5	3.5	6.6	271	82	50	54	*52	39	17	7.4	4.2
20	.5	3.2	5.4	217	77	50	60	53	40	16.5	7.4	4.8
21	.5	3.2	6.6	186	73	50	70	52	38	16	7.8	4.8
22	*.6	3.5	13	201	73	63	73	50	36	16	7.4	5.2
23	.6	3.2	12.5	438	69	73	80	47	37	16	7.4	5.2
24	.8	3.2	9.4	316	65	78	78	57	36	15.5	9.8	5.2
25	.8	3.2	7.4	263	62	89	71	56	35	15	9.4	5.0
26	.8	2.9	6.6	220	60	82	70	55	34	14.5	13	5.0
27	.7	2.9	6.2	*194	58	77	73	72	34	14	18	5.2
28	.6	2.9	6.2	222	58	80	77	65	33	13.5	16.5	11
29	.7	2.6	8.2	245	-	72	67	62	36	*13	14.5	10
30	1.1	2.9	11	302	-	77	61	58	39	12.5	11	13
31	1.1	-	11.5	414	-	78	-	54	-	12	9.8	-
Total	18.9	79.4	307.4	4,936	3,769	1,815	1,876	1,698	1,270	625.0	314.9	200.7
Mean	0.61	2.65	9.92	159	135	58.5	62.5	54.8	42.3	20.2	10.2	6.69
Cfsm	0.035	0.151	0.567	9.09	7.71	3.34	3.57	3.13	2.42	1.15	0.583	0.382
In.	0.04	0.17	0.65	10.49	8.01	3.86	3.99	3.61	2.70	1.33	0.67	0.43
Ac-ft	37	157	610	9,790	7,480	3,600	3,720	3,370	2,520	1,240	625	398

Calendar year 1952: Max 345 Min 0.4 Mean 32.6 Cfsm 1.86 In. 25.33 Ac-ft 23,630
Water year 1952-53: Max 438 Min 0.4 Mean 46.3 Cfsm 2.65 In. 35.95 Ac-ft 33,550

Peak discharge (base, 300 cfs).--Jan. 23 (6:45 a.m.) 480 cfs (4.35 ft); Jan. 31 (7 p.m.) 552 cfs (4.59 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Sept. 18-30.

Discharge, in cubic feet per second, 1953

Day	Discharge	Day	Discharge
Oct. 1	22	Oct. 9	10
2	20	10	17
3	16	11	14.5
4	14	12	11.5
5	12.5	13	9.8
6	10.5	14	9.0
7	9.4	15	*8.4
8	10	16	-

* Discharge measurement made on this day.
Note.--Shifting-control method used Oct. 1-15.

Cowlitz River at Mossyrock, Wash.

Location.--Lat 46°33'00", long. 122°29'30", in SE¼ sec. 1, T. 12 N., R. 2 E., on left bank 200 ft upstream from Harmony Bridge and 1 mile north of Mossyrock.

Drainage area.--1,170 sq mi.

Records available.--January 1912 to September 1917 (incomplete), March 1926 to September 1935, August 1946 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 357.31 ft above mean sea level (levels by city of Tacoma). Prior to Sept. 18, 1913, chain gage on Harmony Bridge 200 ft downstream at different datum. Sept. 18, 1913, to Sept. 30, 1917, March 1926 to Dec. 10, 1933, staff gage within 100 ft of present site at different datum. Dec. 11, 1933, to Mar. 8, 1934, stage determined from reference marks on bridge and staff-gage readings at various sites just upstream from bridge at different datums. Mar. 9, 1934, to September 1935, wire-weight gage on bridge at different datum.

Average discharge.--21 years, 5,308 cfs.

Extremes.--Maximum discharge during year not determined, probably occurred sometime Feb. 1 during period of no gage-height record; minimum, 543 cfs Nov. 30 (gage height, 3.06 ft).
1912-17, 1926-35, 1946-53: Maximum discharge observed, 81,000 cfs Dec. 22, 1933 (gage height, 36.55 ft, site and datum then in use); minimum, that of Nov. 30, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No diversion or regulation.

Revisions (water years).--WSP 769: 1933.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 28 to Aug. 5)

3.0	495	5.5	3,360	10.0	11,400
3.5	930	6.0	4,100	12.0	15,400
4.0	1,450	7.0	5,730	14.0	19,600
4.5	2,030	8.0	7,510	16.0	24,000
5.0	2,670	9.0	9,410	18.0	28,600

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	990	858	567	1,300	27,000	3,110	3,740	7,490	7,550	6,270	2,870	1,670
2	1,000	804	592	2,200	22,000	2,970	3,560	6,500	7,220	6,430	2,790	1,650
3	1,040	768	618	2,700	17,000	2,870	3,420	5,920	7,200	7,240	2,800	1,620
4	1,040	750	750	3,300	16,000	2,800	3,350	6,180	7,170	7,720	2,790	1,550
5	1,030	732	990	3,000	14,000	2,720	3,290	8,190	7,150	7,460	2,700	1,520
6	1,020	723	912	2,600	12,000	2,670	3,250	12,000	7,190	7,740	2,600	1,500
7	*1,010	714	980	2,700	12,000	2,640	3,180	13,400	7,830	8,570	2,750	1,530
8	1,000	705	1,050	4,000	13,000	2,660	3,150	12,300	8,520	9,520	2,640	1,520
9	960	696	990	13,000	11,000	2,900	3,090	10,200	7,970	9,620	2,540	1,480
10	912	705	1,090	16,000	10,000	3,190	2,950	8,230	7,570	7,980	2,420	1,440
11	912	732	1,090	15,000	8,000	3,420	*2,870	6,990	7,890	7,510	2,340	1,420
12	903	813	1,800	25,000	7,000	3,600	2,940	6,320	9,330	7,350	2,290	1,440
13	894	822	2,800	*21,500	6,500	3,520	2,940	*6,340	12,400	7,110	2,280	1,560
14	885	831	2,500	16,200	6,000	3,330	2,910	6,880	11,700	6,700	2,240	1,500
15	849	813	2,200	11,600	5,500	3,260	2,800	7,260	10,000	6,320	2,200	1,460
16	822	768	1,900	11,300	5,200	3,370	2,770	7,240	9,410	5,630	2,270	1,420
17	822	723	1,700	14,900	5,000	3,490	2,840	7,740	9,410	5,070	2,220	1,330
18	822	705	1,500	21,500	4,700	3,320	2,940	8,310	*9,370	5,120	2,140	1,240
19	849	696	1,300	26,500	5,200	3,230	3,150	10,400	8,440	4,990	2,140	1,210
20	840	687	1,200	23,300	4,500	3,150	3,880	10,700	7,510	*4,620	2,140	1,220
21	858	687	1,200	16,000	4,000	3,120	4,940	9,260	6,830	4,350	2,100	1,190
22	858	669	1,300	17,000	3,800	3,260	6,230	8,160	6,450	4,190	2,080	1,180
23	858	660	1,200	16,000	3,600	3,400	7,310	7,200	6,340	4,080	1,900	1,200
24	867	660	1,150	18,000	3,500	3,770	8,650	6,920	6,250	3,920	*1,850	1,170
25	858	*643	1,100	16,000	*3,360	4,350	8,160	6,520	6,160	3,710	1,830	1,150
26	786	626	1,000	14,000	3,260	4,330	7,950	6,210	6,090	3,470	1,790	1,140
27	777	609	1,000	12,000	3,210	4,190	9,720	7,190	6,070	3,330	1,950	1,130
28	750	600	1,000	9,600	3,190	4,130	13,200	7,970	6,140	3,260	2,250	*1,210
29	768	575	1,100	9,400	-	4,010	11,200	8,800	6,070	3,180	2,080	1,550
30	795	559	1,400	12,000	-	4,000	8,940	9,120	6,360	3,150	1,830	1,450
31	849	-	1,400	20,000	-	4,000	-	8,360	-	3,090	1,690	-
Total	27,624	21,333	39,379	397,600	239,520	104,780	149,320	254,300	233,590	178,700	70,510	41,650
Mean	891	711	1,270	12,830	8,554	3,380	4,977	8,203	7,786	5,765	2,275	1,388
Cfsm	0.762	0.608	1.09	11.0	7.31	2.89	4.25	7.01	6.65	4.93	1.94	1.19
In.	0.88	0.68	1.25	12.64	7.61	3.33	4.75	8.08	7.42	5.68	2.24	1.32
Ac-ft	54,790	42,310	78,110	788,600	475,100	207,800	296,200	504,400	463,300	354,400	139,900	82,610

Calendar year 1952: Max 15,300 Min 559 Mean 3,598 Cfsm 3.08 In. 41.86 Ac-ft 2,612,000
Water year 1952-53: Max 27,000 Min 559 Mean 4,817 Cfsm 4.12 In. 55.88 Ac-ft 3,488,000

Peak discharge (base, 16,000 cfs).--Jan. 12 (time unknown) 27,700 cfs (17.60 ft); Jan. 19 (6 a.m.) 28,100 cfs (17.78 ft); Feb. 1 (time and discharge unknown).
* Discharge measurement made on this day.
Note.--No gage-height record Dec. 12 to Jan. 12, Jan. 21 to Feb. 24, Aug. 21-23; discharge estimated on basis of recorded range in stage and records for stations near Kosmos and near Mayfield.

West Fork Tilton River near Morton, Wash.

Location.--Lat 46°36'45", long. 122°14'45", in NE¼ sec. 13, T. 13 N., R. 4 E., on left bank three-quarters of a mile upstream from mouth and 4 miles northeast of Morton.

Drainage area.--16.4 sq mi.

Records available.--June 1950 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 1,150 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,680 cfs Jan. 22 (gage height, 5.12 ft); minimum, 4.6 cfs Oct. 29 (gage height, 0.88 ft).
1950-53: Maximum discharge, 2,460 cfs Feb. 9, 1951 (gage height, 6.05 ft, from high-water mark in well); minimum, that of Oct. 29, 1952; minimum gage height, 0.87 ft Aug. 25, Sept. 20-24, 1951.

Remarks.--Records good except those for period of shifting control, which are fair, and those for period of no gage-height record, which are poor. No diversion or regulation. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating tables, water year 1952-53, except periods of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 22				Jan. 23 to Sept. 30			
0.89	4.8	2.5	134	1.0	7.2	3.0	265
1.0	7.2	3.0	250	1.2	13	3.5	425
1.2	13	3.5	420	1.4	22	4.0	645
1.4	21	4.0	650	1.7	43	4.5	930
1.7	39	4.5	980	2.0	72	5.0	1,300
2.0	66	5.0	1,400	2.5	145		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.6	14	*a7.2	82	609	52	98	103	74	59	15.5	21
2	5.4	8.7	17	449	408	50	89	96	68	53	15	19.5
3	5.4	7.4	27	478	610	46	85	93	63	49	15	17.5
4	5.4	7.0	67	253	411	45	77	108	60	45	*14.5	16
5	5.2	6.7	61	174	319	45	77	140	57	42	14.5	15
6	5.0	6.5	40	144	343	45	71	145	57	40	15	14
7	5.0	6.3	64	216	457	49	64	132	74	37	14.5	14
8	5.0	5.8	78	560	337	78	58	131	72	39	13.5	14
9	5.2	5.8	53	868	232	98	53	113	69	34	13	13
10	5.4	9.6	87	440	174	100	50	94	71	31	12.5	12.5
11	5.2	16.5	112	998	134	134	50	84	66	30	12.5	12
12	5.2	15.5	610	777	110	138	53	79	71	28	12	12
13	5.2	23	332	*570	96	108	*57	82	110	28	11.5	11.5
14	5.0	26	212	436	90	90	56	80	93	30	11.5	11
15	5.0	24	147	472	85	92	57	72	79	27	11.5	10.5
16	5.0	16.5	112	698	120	138	69	66	69	25	11	*10
17	5.0	14	92	931	127	124	76	65	62	24	11	10
18	5.0	12.5	75	945	103	104	80	84	57	23	10.5	9.8
19	5.0	12	63	910	88	96	97	*108	58	23	10.5	9.8
20	5.6	11.5	53	570	79	90	124	107	63	22	10.5	9.5
21	6.5	11	54	478	72	85	140	114	57	21	11	9.3
22	5.4	10.5	53	743	68	100	140	121	52	20	10.5	9.3
23	5.6	10	48	1,000	61	180	204	108	49	20	10	10.5
24	8.5	9.8	42	481	58	221	169	143	47	19	12.5	9.8
25	6.0	9.5	38	383	55	201	136	132	45	19	13	9.3
26	5.4	9.3	36	271	54	147	140	119	42	18.5	22	9.3
27	5.2	9.0	33	216	*55	138	183	140	43	17.5	56	9.5
28	*4.8	a8.0	37	214	56	147	159	119	42	17	40	33
29	5.6	a7.5	58	592	-	127	121	108	55	17	32	18
30	10.5	a7.0	110	739	-	129	111	96	70	17	25	115
31	14.5	-	98	930	-	117	-	83	-	16.5	23	-
Total	181.8	340.9	2,916.2	17,018	5,411	3,314	2,944	3,265	1,895	891.5	510.5	495.6
Mean	5.86	11.4	94.1	549	193	107	98.1	105	63.2	28.8	16.5	16.5
Cfsm	0.357	0.695	5.74	33.5	11.8	6.52	5.98	6.40	3.85	1.76	1.01	1.01
In.	0.41	0.77	6.61	38.59	12.27	7.52	6.68	7.40	4.30	2.02	1.16	1.12
Ac-ft	361	676	5,780	33,750	10,730	6,570	5,840	6,480	3,760	1,770	1,010	983

Calendar year 1952: Max 1,180 Min 4.8 Mean 73.8 Cfsm 4.50 In. 61.21 Ac-ft 53,550
Water year 1952-53: Max 1,000 Min 4.8 Mean 107 Cfsm 6.52 In. 88.85 Ac-ft 77,710

Peak discharge (base, 800 cfs).--Dec. 12 (9 a.m.) 805 cfs (4.25 ft); Jan. 9 (2 p.m.) 1,020 cfs (4.55 ft); Jan. 11 (1 p.m.) 1,560 cfs (4.99 ft); Jan. 18 (3 p.m.) 1,080 cfs (4.44 ft); Jan. 22 (12 p.m.) 1,680 cfs (5.12 ft); Jan. 31 (2 p.m.) 1,210 cfs (4.89 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for stations on nearby streams.
Note.--Shifting-control method used Jan. 11-22, Feb. 25 to May 5, May 24 to Sept. 12.

Tilton River near Cinebar, Wash.

Location.--Lat 46°34'35", long. 122°31'15", in SW¼ sec. 26, T. 13 N., R. 2 E., on left bank 1,000 ft downstream from Cinnabar Creek, 2 miles southeast of Cinebar, and 2½ miles upstream from mouth.

Drainage area.--158 sq mi.

Records available.--February 1941 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 397.6 ft above mean sea level (river-profile survey). Prior to Apr. 18, 1941, staff gage at same site and datum.

Average discharge.--12 years, 888 cfs.

Extremes.--Maximum discharge during year, 11,700 cfs Jan. 31 (gage height, 12.23 ft); minimum, 62 cfs Oct. 19, 20 (gage height, 3.61 ft).
1941-53: Maximum discharge, 14,500 cfs sometime during period of no gage-height record in December 1946 (gage height, 14.36 ft, from high-water mark in well), from rating curve extended above 4,000 cfs; minimum, 60 cfs Sept. 21-24, 1951 (gage height, 3.54 ft).

Remarks.--Records excellent. No diversion or regulation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

3.6	61	6.5	1,220
3.9	102	7.0	1,650
4.2	156	7.5	2,160
4.5	225	8.0	2,750
4.8	312	9.0	4,200
5.2	460	10.0	6,050
5.6	645	11.0	8,310
6.0	880	12.0	11,000

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	132	77	527	6,810	565	990	874	689	472	158	184
2	69	100	107	1,650	4,060	527	893	820	630	444	154	177
3	68	87	150	2,350	5,040	509	832	754	585	416	152	162
4	69	81	362	1,440	3,860	492	772	766	545	384	148	150
5	68	77	380	1,060	3,050	484	748	880	518	362	146	140
6	67	74	278	856	3,360	476	718	926	518	338	148	132
7	67	73	309	1,000	3,780	472	672	880	718	319	150	132
8	68	71	540	2,350	2,940	532	635	926	689	359	144	132
9	67	69	392	3,400	2,160	656	600	886	656	309	142	127
10	67	73	630	2,420	1,720	694	555	760	689	296	142	120
11	67	99	536	3,810	1,420	844	550	672	615	278	134	118
12	66	118	2,320	4,060	1,210	906	610	615	610	264	127	118
13	66	134	1,720	*3,020	1,070	802	*645	*600	1,000	258	123	118
14	66	148	1,110	2,480	1,000	694	656	595	886	290	123	113
15	65	173	802	2,440	964	667	625	575	760	272	120	110
16	63	132	640	3,760	1,150	856	640	536	662	249	120	108
17	63	112	536	5,540	1,320	912	672	514	595	233	118	107
18	63	102	456	6,300	1,110	814	662	550	545	222	120	104
19	62	98	396	6,090	971	766	712	748	*555	218	115	105
20	65	93	348	4,020	868	736	844	868	640	*212	116	105
21	69	90	348	3,400	790	742	984	906	600	205	116	102
22	71	87	440	4,280	772	900	1,030	945	545	200	112	99
23	69	84	404	*8,660	700	1,280	1,300	880	570	195	115	104
24	86	84	362	4,680	645	1,550	1,230	1,290	555	193	*134	105
25	83	*81	322	3,660	*620	1,620	1,020	1,270	532	188	150	100
26	73	79	296	2,790	595	1,280	984	1,070	460	186	169	99
27	69	77	278	2,300	580	1,140	1,150	1,140	460	177	457	100
28	68	76	278	2,660	605	1,220	1,150	1,010	452	173	373	*198
29	71	73	388	4,720	-	1,090	958	906	452	169	281	177
30	87	73	555	6,900	-	1,120	912	862	527	164	225	313
31	107	-	575	8,240	-	1,100	-	760	-	162	195	-
Total	2,178	2,850	16,335	110,863	53,170	26,446	24,749	25,784	18,258	8,207	5,027	3,959
Mean	70.3	95.0	527	3,576	1,899	853	825	832	609	265	162	132
Cfsm	0.445	0.601	3.34	22.6	12.0	5.40	5.22	5.27	3.85	1.68	1.03	0.835
In.	0.51	0.67	3.84	26.09	12.52	6.22	5.83	6.07	4.30	1.93	1.18	0.93
Ac-ft	4,320	5,650	32,400	219,900	105,500	52,450	49,090	51,140	36,210	16,280	9,970	7,850

Calendar year 1952: Max 7,560 Min 62 Mean 542 Cfsm 3.43 In. 46.72 Ac-ft 393,800
Water year 1952-53: Max 8,660 Min 62 Mean 816 Cfsm 5.16 In. 70.09 Ac-ft 590,800

Peak discharge (base, 7,000 cfs).--Jan. 23 (5 a.m.) 10,400 cfs (11.76 ft); Jan. 31 (9 p.m.) 11,700 cfs (12.23 ft).

* Discharge measurement made on this day.

Klickitat Creek at Mossyrock, Wash.

Location.--Lat 46°31'15", long. 122°28'05", on line between secs. 17 and 18, T. 12 N., R. 3 E., on left bank at upstream side of highway bridge, 1 mile southeast of Mossyrock and 4¼ miles upstream from mouth.

Drainage area.--3.45 sq mi (revised).

Records available.--August 1948 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 668.41 ft above mean sea level (levels by city of Tacoma).

Average discharge.--5 years, 8.97 cfs.

Extremes.--Maximum discharge during year, 60 cfs Jan. 31 (gage height, 2.35 ft), from rating curve extended above 35 cfs; no flow Oct. 1 to Dec. 4, Aug. 17-23, Sept. 15-20, 22-27.
1948-53: Maximum discharge, 165 cfs Feb. 17, 1949 (gage height, 3.62 ft), from rating curve extended above 35 cfs; no flow for long periods each year.

Remarks.--Records fair except those below 1 cfs, which are poor. No known diversion or regulation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.57	0	1.6	23
.6	.1	1.8	32
.8	1.0	2.0	42
1.0	3.6	2.2	53
1.2	9.0	2.4	65
1.4	15		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			0	3.0	38	8.4	12.5	5.4	5.2	3.2	0.3	0.5
2			0	9.3	36	7.5	11.5	4.9	5.2	2.9	.2	.5
3			0	9.0	42	7.2	11.5	4.2	4.9	2.7	.3	.3
4			0	5.4	38	6.9	11	3.7	4.4	2.6	.4	.2
5			.2	3.7	34	6.6	11.5	3.6	4.7	2.1	.1	.2
6			.4	3.4	31	6.3	11	3.6	6.3	1.6	.2	.2
7			.8	6.6	32	6.0	10	4.9	13.5	1.8	.3	.1
8			2.3	13	25	5.4	10	7.5	9.0	3.4	.3	.2
9			1.8	24	23	5.2	9.3	7.2	6.9	1.9	.4	.2
10			2.4	14.5	21	5.7	8.4	5.4	5.7	1.6	.2	.1
11			1.8	25	19.5	8.1	*8.4	4.4	5.2	1.4	.2	.1
12			3.0	20	17.5	6.6	10.5	*3.7	7.8	1.2	.1	.1
13			1.9	*19	16	6.0	9.9	3.6	11.5	1.4	.1	.1
14			1.2	15	17.5	5.4	8.4	4.0	6.9	3.2	.1	.1
15			.9	14.5	16	5.7	7.5	4.0	5.7	1.9	.1	0
16			.8	23	19.5	10	7.2	3.7	5.2	1.3	.1	0
17			.6	26	17	9.6	6.9	3.6	4.7	1.0	0	0
18			.5	29	14	8.1	6.3	6.0	*4.7	.9	0	0
19			.5	31	13	7.2	6.0	7.2	6.3	1.1	0	0
20			.7	34	12.5	7.8	5.7	6.6	7.2	.9	0	0
21			2.1	30	11.5	9.9	7.5	9.0	6.0	*.7	0	.1
22			7.2	37	13	13	6.9	7.8	4.4	.7	0	0
23			4.0	35	11.5	11.5	7.8	6.6	4.2	.7	0	0
24			2.4	32	*10	14.5	6.3	15.5	4.9	.6	.1	*0
25		(*)	1.8	36	9.9	14	5.7	9.3	4.2	.5	*.4	0
26			1.4	33	9.3	11.5	6.6	8.1	3.7	.5	1.4	0
27			1.2	32	9.9	12.5	7.2	10	4.9	.5	3.7	0
28			1.4	38	9.9	14.5	6.0	7.5	4.7	.4	2.3	2.1
29			2.9	34	-	12	5.2	7.2	4.0	.4	1.1	.7
30			2.9	34	-	14.5	5.4	6.6	4.0	.3	.6	3.0
31		-	2.6	44	-	14	-	5.7	-	.3	.5	-
Total	0	0	49.7	713.4	567.5	281.6	248.1	190.5	176.0	43.7	13.5	8.8
Mean	0	0	1.60	23.0	20.3	9.08	8.27	6.15	5.87	1.41	0.44	0.29
Cfsm	0	0	0.464	6.67	5.88	2.63	2.40	1.78	1.70	0.409	0.128	0.084
In.	0	0	0.54	7.69	6.12	3.04	2.67	2.05	1.90	0.47	0.15	0.09
Ac-ft	0	0	99	1,420	1,130	559	492	378	349	87	27	17

Calendar year 1952: Max 38 Min 0 Mean 4.06 Cfsm †1.18 In. †16.01 Ac-ft 2,950
Water year 1952-53: Max 44 Min 0 Mean 6.28 Cfsm 1.82 In. 24.72 Ac-ft 4,560

Peak discharge (base, 60 cfs).--Jan. 31 (6:30 p.m.) 60 cfs (2.35 ft).
* Discharge measurement or observation of no flow made on this day.
† Computed on basis of revised drainage area.

Winston Creek near Mayfield, Wash.

Location.--Lat 46°29'00", long. 122°31'15", about center of sec. 35, T. 12 N., R. 2 E., on left bank 100 ft downstream from bridge, 3 miles southeast of Mayfield, and 3¾ miles upstream from mouth.

Drainage area.--40.0 sq mi.

Records available.--October 1949 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 470 ft (from topographic map).

Extremes.--Maximum discharge during year, 955 cfs Jan. 19 (gage height, 5.50 ft); minimum, 0.91 cfs Oct. 7 (gage height, 1.67 ft).
1949-53: Maximum discharge, 1,960 cfs Feb. 24, 1950 (gage height, 6.94 ft); minimum, 0.6 cfs Aug. 24, 1951 (gage height, 1.63 ft).

Remarks.--Records good above 100 cfs, fair below. Slight regulation by Long Bell Lumber Co. for millpond.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
1.7	1.2	2.3	22	1.9	4.5	3.5	199
1.9	4.4	2.6	49	2.1	11.5	4.0	326
2.1	11	3.0	101	2.3	23	4.5	490
				2.6	46	5.0	695
				3.0	101	5.5	955

Note.--Same as following table above 3.0 ft.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.5	9.1	9.1	66	574	82	197	74	96	53	15	18
2	3.7	6.7	8.4	129	468	76	184	76	89	48	13.5	17
3	3.1	5.8	20	150	479	71	190	67	83	45	11.5	13
4	2.6	5.5	51	120	427	68	154	62	74	43	13	12.5
5	2.8	5.5	38	103	375	67	150	54	70	37	12	10.5
6	3.3	5.5	29	89	329	65	132	53	77	34	14	10
7	2.4	4.7	59	115	329	61	120	61	131	32	13.5	10
8	2.8	4.2	90	204	279	60	120	83	101	44	13.5	10
9	3.3	4.9	65	347	239	57	111	84	95	34	13.5	9.7
10	3.7	5.5	96	323	213	58	100	82	86	31	11.5	9.2
11	3.9	8.8	76	390	188	76	*98	71	80	29	10.5	10
12	3.5	8.0	113	381	160	78	103	*67	77	27	8.8	9.2
13	3.9	10.5	90	*384	144	74	106	*60	101	25	8.5	8.8
14	4.2	16.5	68	338	146	74	104	65	83	38	8.5	8.1
15	3.3	16.5	57	293	136	68	98	64	74	33	8.8	7.4
16	2.9	10.5	47	420	169	113	96	58	68	27	9.2	7.1
17	2.8	8.4	41	620	188	132	92	54	*62	25	8.1	7.7
18	1.9	7.4	34	628	162	127	88	61	60	24	7.4	7.4
19	2.2	7.4	34	760	142	125	82	71	61	24	8.5	7.4
20	3.1	7.0	34	650	134	123	78	86	64	22	7.4	8.1
21	3.3	5.5	42	539	123	127	82	103	61	*19.5	8.8	8.8
22	3.3	6.4	96	539	122	171	78	98	54	21	8.1	6.8
23	3.5	5.5	79	566	106	197	83	92	60	21	8.5	6.8
24	8.4	*5.2	62	468	*101	220	76	186	64	20	16.5	7.4
25	6.7	5.8	52	479	90	244	68	169	62	19	*22	*7.7
26	5.2	3.5	47	410	86	213	71	154	56	18	30	7.1
27	4.2	3.4	42	359	86	197	77	173	56	16.5	46	8.8
28	3.9	3.4	42	430	94	217	78	144	60	17	32	34
29	4.7	3.5	58	512	-	201	68	132	58	16	25	21
30	10.5	4.7	72	512	-	220	68	122	61	15	19	39
31	12.5	-	68	589	-	217	-	110	-	14	16	-
Total	129.1	205.3	1,719.5	11,913	6,089	3,879	3,152	2,836	2,224	872.0	448.6	348.5
Mean	4.16	6.84	55.5	384	217	125	105	91.5	74.1	28.1	14.5	11.6
Cfsm	0.104	0.171	1.39	9.60	5.42	3.12	2.62	2.29	1.85	0.702	0.362	0.290
In.	0.12	0.19	1.60	11.08	5.66	3.61	2.93	2.64	2.07	0.81	0.42	0.32
Ac-ft	256	407	3,410	23,630	12,080	7,690	6,250	5,630	4,410	1,730	890	691

Calendar year 1952: Max 659 Min 1.9 Mean 56.7 Cfsm 1.42 In. 19.30 Ac-ft 41,170
Water year 1952-53: Max 760 Min 1.9 Mean 92.6 Cfsm 2.32 In. 31.45 Ac-ft 67,070

Peak discharge (base, 900 cfs).--Jan. 19 (12:30 a.m.) 955 cfs (5.50 ft).
* Discharge measurement made on this day.

Cowlitz River near Mayfield, Wash.

Location.--Lat 46°30'40", long. 122°36'50", in NE¼ sec. 24, T. 12 N., R. 1 E., on right bank 1 mile upstream from Mill Creek, 2 miles downstream from Winston Creek, and 2½ miles west of Mayfield.

Drainage area.--1,401 sq mi.

Records available.--August 1910 to November 1911, April 1934 to September 1953. Published as "at Mayfield" 1910-11.

Gage.--Water-stage recorder. Datum of gage is 226.6 ft above mean sea level, datum of 1929. August 1910 to November 1911 staff gage at site 2½ miles upstream at different datum. Apr. 27 to June 30, 1934, staff gage at present site and datum.

Average discharge.--19 years (1934-53), 5,856 cfs.

Extremes.--Maximum discharge during year, 37,100 cfs Feb. 1 (gage height, 19.14 ft); minimum, 698 cfs Nov. 30 (gage height, 7.68 ft).

1910-11, 1934-53: Maximum discharge, 58,000 cfs Dec. 13, 1946 (gage height, 24.75 ft); minimum, that of Nov. 30, 1952; minimum gage height, 7.18 ft Nov. 30, Dec. 1, 1936.

Flood in December 1933 is known to have exceeded that of Dec. 13, 1946.

Remarks.--Records good except those for period of no gage-height record, which are fair. No regulation or diversion. Records of water temperatures for the water year 1953 are given in WSP 1293.

Revisions.--WSP 1218: Drainage area.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 11				Jan. 12 to Sept. 30			
7.6	610	11.0	6,140	8.4	1,300	12.0	8,600
8.0	1,080	12.0	8,490	8.8	1,800	13.0	11,600
8.5	1,720	13.0	11,200	9.2	2,360	14.0	15,000
9.0	2,440	14.0	14,000	9.6	3,000	15.0	18,600
9.5	3,240	15.0	17,400	10.0	3,720	17.0	27,000
10.0	4,120	16.0	20,900	10.5	4,740	19.0	36,400
10.5	5,090			11.0	5,900		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,130	1,100	732	2,060	36,100	4,000	5,500	8,870	8,430	6,690	3,040	1,980
2	1,140	1,010	780	3,210	28,800	3,800	5,000	7,790	8,040	6,790	2,950	1,950
3	1,150	948	864	5,030	22,000	3,670	4,900	7,000	7,960	7,700	2,940	1,880
4	1,140	912	1,240	5,110	20,000	*3,540	4,750	7,170	7,840	8,180	2,950	1,810
5	1,140	900	1,490	4,220	19,000	3,450	4,600	9,230	7,840	7,960	2,870	1,790
6	1,130	888	1,330	3,670	16,000	3,380	4,500	12,600	7,840	8,040	2,840	1,760
7	1,130	852	1,410	3,740	16,000	3,340	4,300	14,200	8,720	8,840	2,970	1,770
8	1,130	852	1,820	6,070	17,000	3,410	4,250	13,500	9,470	9,890	2,840	1,770
9	1,130	840	1,590	13,400	14,000	3,720	4,200	11,400	8,960	10,200	2,760	1,740
10	1,100	852	1,870	20,900	12,000	4,080	4,000	9,410	8,520	8,490	2,630	1,690
11	1,090	924	1,790	17,900	10,000	4,520	*3,800	7,960	8,630	7,980	2,540	1,660
12	1,080	1,020	3,750	*29,900	9,500	4,810	3,940	*7,200	9,950	7,870	2,460	1,670
13	1,070	1,040	4,220	*27,200	8,500	4,650	3,980	7,140	13,100	7,650	2,410	1,790
14	1,060	1,090	3,600	*19,900	7,500	4,320	3,980	7,680	12,700	7,260	2,390	1,760
15	1,010	1,080	2,860	15,100	7,000	4,200	3,820	8,040	10,800	6,890	2,350	1,690
16	972	972	2,460	16,100	6,500	4,590	3,800	7,960	10,200	6,040	2,410	1,650
17	960	912	2,170	21,200	6,000	4,850	3,900	8,320	*10,000	5,400	2,350	1,590
18	960	888	1,990	29,000	6,000	4,520	3,980	8,960	10,100	5,400	2,250	1,480
19	984	876	1,850	35,000	6,500	4,380	4,200	10,900	9,200	5,280	2,230	1,460
20	972	852	1,720	28,300	5,500	4,260	5,050	11,600	8,350	4,850	2,280	1,470
21	996	852	1,690	22,200	5,200	4,240	6,530	10,400	7,590	*4,500	2,290	1,420
22	1,010	840	1,970	20,400	4,800	4,630	8,040	9,290	7,000	4,340	2,120	1,420
23	1,020	828	1,890	27,900	4,600	5,050	9,440	8,240	6,840	4,200	2,040	1,430
24	1,070	*816	1,710	26,300	*4,520	5,500	10,800	8,520	6,760	4,020	2,070	1,430
25	1,060	792	1,560	22,500	*4,300	6,500	10,200	8,040	6,560	3,800	*2,080	*1,360
26	972	768	1,470	18,100	4,180	6,200	9,770	7,340	6,480	3,610	2,090	1,350
27	936	756	1,420	14,800	4,120	6,000	11,300	8,460	6,430	3,430	2,500	1,340
28	912	744	1,400	14,500	4,140	5,500	14,500	9,230	6,500	3,340	2,700	1,610
29	924	720	1,580	16,900	-	5,600	12,500	9,890	6,480	3,250	2,500	1,880
30	1,020	709	1,890	20,000	-	5,500	10,300	10,300	6,840	3,200	2,190	1,900
31	1,080	-	2,140	26,200	-	5,500	-	9,440	-	3,180	2,040	-
Total	32,478	26,633	58,256	536,810	309,760	141,710	189,830	286,080	254,130	188,270	77,080	49,500
Mean	1,048	888	1,879	17,320	11,060	4,571	6,328	9,228	8,471	6,073	2,486	1,650
Cfsm	0.748	0.634	1.34	12.4	7.89	3.26	4.52	6.59	6.05	4.33	1.77	1.18
In.	0.86	0.71	1.55	14.25	8.22	3.76	5.04	7.59	6.75	5.00	2.05	1.31
Ac-ft	64,420	52,830	115,500	‡1,065	614,400	281,100	376,500	567,400	504,100	373,400	152,900	98,180

Calendar year 1952: Max 20,000 Min 709 Mean 4,230 Cfsm 3.02 In. 41.10 Ac-ft 3,071,000
Water year 1952-53: Max 36,100 Min 709 Mean 5,892 Cfsm 4.21 In. 57.09 Ac-ft 4,266,000

Peak discharge (base, 16,000 cfs).--Jan. 10 (2:30 a.m.) 22,100 cfs (15.88 ft); Jan. 12 (11:30 a.m.) 31,000 cfs (17.90 ft); Jan. 19 (9:45 a.m.) 36,200 cfs (18.96 ft); Jan. 23 (11:20 a.m.) 28,600 cfs (17.36 ft); Feb. 1 (10:30 a.m.) 37,100 cfs (19.14 ft).

* Discharge measurement made on this day.

‡ Expressed in thousands.

Note.--No gage-height record Feb. 3-23, Mar. 24 to Apr. 10; discharge estimated on basis of recorded range in stage and records for nearby stations.

South Fork Toutle River at Toutle, Wash.

Location.--Lat 46°19'20", long. 122°41'45", in SW¼NW¼ sec. 28, T. 10 N., R. 1 E., on left bank half a mile southwest of Toutle, 1½ miles upstream from mouth, and 3 miles downstream from Johnson Creek.

Drainage area.--118 sq mi.

Records available.--October 1939 to September 1953.

Gage.--Water-stage recorder. Datum of gage is at mean sea level (from river-profile survey) Prior to Nov. 11, 1939, staff gage at same site at datum 451.12 ft above mean sea level.

Average discharge.--14 years, 588 cfs.

Extremes.--Maximum discharge during year, 7,080 cfs Jan. 19 (elevation, 457.11 ft); minimum, 62 cfs Nov. 29 (elevation, 452.56 ft).
1939-53: Maximum discharge, 8,710 cfs Dec. 11, 1946 (elevation, 458.54 ft); minimum, that of Nov. 29, 1952; minimum elevation, 451.46 ft Aug. 18, 19, 1940.

Remarks.--Records good except those for periods of no gage-height record, which are fair. No diversion or regulation.

Revisions (water years).--WSP 1184: 1949.

Rating tables, water year 1952-53 (elevation, in feet, and discharge, in cubic feet per second)

Oct. 1 to June 15				June 16 to Sept. 30	
452.6	65	454.5	1,360	452.6	97
452.8	115	455.0	2,050	452.8	149
453.0	180	455.5	2,890	453.0	214
453.3	315	456.0	3,900	453.3	360
453.6	500	457.0	6,650	453.6	561
454.0	820				

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*75	110	85	514	3,160	332	626	698	594	372	142	152
2	75	90	110	934	2,160	315	563	634	542	360	140	148
3	75	82	180	1,410	2,390	300	528	578	528	354	142	141
4	75	80	714	1,000	2,170	295	479	602	486	344	148	134
5	72	78	658	775	1,750	285	479	730	465	327	153	127
6	72	75	430	650	1,530	280	465	838	535	316	158	120
7	70	72	714	847	1,730	280	430	856	820	316	158	120
8	70	72	690	1,690	1,540	295	430	*829	829	322	148	120
9	68	75	514	3,600	1,230	332	418	739	722	295	140	117
10	68	85	682	2,570	1,010	364	*406	642	666	276	128	114
11	68	139	563	2,910	856	479	424	563	618	256	122	111
12	68	156	1,090	*3,720	739	586	479	514	626	248	117	108
13	68	200	1,130	2,800	658	493	465	507	610	231	114	106
14	68	234	829	1,930	642	437	437	514	549	256	112	103
15	70	196	634	1,540	610	486	412	500	500	239	112	100
16	70	136	521	2,750	883	940	400	472	*475	214	114	99
17	70	115	430	3,830	940	847	418	458	461	*204	114	98
18	70	108	364	4,670	739	706	400	542	428	200	114	98
19	70	102	376	5,810	*634	634	430	829	454	190	114	97
20	72	100	305	3,990	578	594	514	793	503	179	114	97
21	78	*100	310	2,950	514	549	594	874	441	176	*110	96
22	78	98	444	3,250	486	618	618	874	403	173	104	96
23	72	95	388	4,370	437	739	714	820	397	170	104	100
24	102	90	315	2,850	406	901	698	1,020	415	164	136	*98
25	82	88	280	2,530	376	1,060	650	892	461	161	152	97
26	75	88	256	2,050	354	865	690	802	421	158	207	97
27	72	85	247	1,680	348	820	1,140	1,090	421	152	354	104
28	70	82	252	1,920	359	901	1,190	940	428	155	276	193
29	72	80	400	2,330	-	829	901	847	409	152	210	152
30	110	80	674	2,330	-	802	802	757	415	149	173	434
31	110	-	618	2,930	-	714	-	674	-	144	155	-
Total	2,335	3,191	15,203	77,130	29,229	18,078	17,200	22,428	15,622	7,253	4,585	3,777
Mean	75.3	106	490	2,488	1,044	583	573	723	521	234	148	126
Cfsm	0.638	0.898	4.15	21.1	8.85	4.94	4.86	6.13	4.42	1.98	1.25	1.07
In.	0.74	1.01	4.79	24.31	9.21	5.70	5.42	7.07	4.92	2.29	1.45	1.19
Ac-ft	4,630	6,330	30,150	153,000	57,970	35,860	34,120	44,490	30,990	14,390	9,090	7,490

Calendar year 1952: Max 3,880 Min 68 Mean 403 Cfsm 3.42 In. 46.50 Ac-ft 292,500
Water year 1952-53: Max 5,810 Min 68 Mean 592 Cfsm 5.02 In. 68.10 Ac-ft 428,500

Peak discharge (base, 4,200 cfs).--Jan. 9 (6:30 p.m.) 4,990 cfs (456.42 ft); Jan. 11 (7 p.m.) 4,620 cfs (456.28 ft); Jan. 19 (1:30 a.m.) 7,080 cfs (457.11 ft); Jan. 23 (2 a.m.) 5,150 cfs (456.48 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Aug. 1-10, 18-20, Sept. 1-24; discharge estimated on basis of recorded range in stage and records for nearby stations.

Toutle River near Silver Lake, Wash.

Location.--Lat 46°20'10", long. 122°43'30", in SE¼ sec. 19, T. 10 N., R. 1 E., on right bank just downstream from highway bridge, half a mile downstream from confluence of North and South Forks and 5 miles northeast of Silver Lake.
Drainage area.--474 sq mi.
Records available.--September 1909 to August 1912, October 1919 to December 1923 (fragmentary), September 1929 to September 1953. Published as "near Castle Rock" 1909-12.
Gage.--Water-stage recorder. Datum of gage is 407.3 ft above mean sea level (from river-profile survey). Prior to Aug. 4, 1912, staff gage at site 2 miles downstream, datum of gage, 307.3 ft above mean sea level (unadjusted). Oct. 9, 1919, to Dec. 14, 1923, water-stage recorder at site 300 ft downstream at different datum. Sept. 25 to Nov. 10, 1929, chain gage and Nov. 11, 1929, to Oct. 6, 1938, Oct. 4, 1950, to Apr. 16, 1952, water-stage recorder, at old highway bridge at same datum. Oct. 7, 1938, to Oct. 3, 1950, and since Apr. 17, 1952, water-stage recorder at present site and datum.
Average discharge.--29 years (1909-11, 1919-21, 1922-23, 1929-53), 1,984 cfs.
Extremes.--Maximum discharge during year, 15,600 cfs Jan. 19 (gage height, 11.86 ft, from high-water mark in well); minimum, 270 cfs Nov. 28 (gage height, 1.60 ft).
1909-12, 1919-23, 1929-53: Maximum discharge observed, 35,600 cfs Mar. 2, 1910; maximum gage height recorded, 22.7 ft Dec. 23, 1933; minimum discharge, 240 cfs Nov. 21, 1929.
Remarks.--Records good. No diversion or regulation. Records of water temperatures for water year 1953 are given in WSP 1293.
Revisions (water years).--WSP 292: 1909, calendar year. WSP 754: 1930-32.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Nov. 16, Nov. 21 to Dec. 16, Jan. 13-17, Feb. 19 to Sept. 30

1.6	270	4.0	2,510
1.9	420	5.0	4,300
2.2	595	6.0	6,150
2.5	805	7.0	7,800
3.0	1,250	8.0	9,400
3.5	1,810	9.0	11,000

Nov. 17-20, Dec. 17 to Jan. 12, Jan. 18 to Feb. 18

1.8	350	4.5	3,210
2.1	500	5.0	4,140
2.4	670	6.0	6,000
2.7	890	7.0	7,730
3.0	1,150	8.0	9,330
3.5	1,690	9.0	10,900
4.0	2,350	11.0	14,100

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*325	387	335	1,360	10,300	1,400	2,100	2,200	2,000	1,450	608	589
2	320	335	392	2,150	7,340	1,330	1,910	2,000	1,890	1,430	589	589
3	315	320	566	3,500	7,050	1,280	1,790	1,840	1,790	1,470	583	559
4	310	306	1,480	2,610	6,660	1,230	1,700	1,840	1,710	1,450	583	529
5	306	310	1,340	2,070	5,410	1,200	1,670	2,130	1,650	1,390	583	505
6	306	302	1,020	1,800	4,900	1,170	1,620	2,560	1,730	1,450	589	493
7	302	297	1,680	2,170	5,110	1,150	1,550	2,690	2,340	1,500	602	493
8	306	297	1,680	3,870	4,800	1,170	1,540	*2,670	2,350	1,610	577	493
9	306	292	1,310	8,640	4,040	1,240	*1,490	2,460	2,100	1,480	565	475
10	306	360	1,710	7,420	3,480	1,320	1,430	2,170	2,000	1,350	553	464
11	306	458	1,450	7,900	3,080	1,560	1,440	1,910	1,970	1,300	535	453
12	302	475	2,380	*10,400	2,810	1,750	1,590	1,770	2,070	1,250	523	458
13	302	571	2,180	8,340	2,590	1,610	1,590	1,710	2,250	1,200	511	448
14	297	654	1,750	5,880	2,450	1,490	1,580	1,730	2,020	1,240	499	448
15	292	511	1,460	4,740	2,370	1,550	1,490	1,710	1,850	1,140	493	442
16	292	431	1,280	7,640	2,810	2,410	1,460	1,650	*1,750	1,040	499	431
17	292	435	1,100	10,500	3,170	2,380	1,480	1,620	1,710	*988	487	426
18	292	395	997	11,700	2,620	2,100	1,420	1,800	1,670	979	470	420
19	288	370	914	14,000	*2,240	1,970	1,440	2,280	1,650	944	464	414
20	297	355	874	10,700	2,110	1,850	1,620	2,380	1,710	869	470	414
21	310	*350	922	8,430	1,970	1,760	1,820	2,560	1,590	829	*475	409
22	297	345	1,340	7,990	1,850	1,950	1,980	2,530	1,460	805	453	404
23	306	335	1,200	10,900	1,790	2,310	2,220	2,290	1,440	782	458	409
24	387	325	1,010	7,860	1,680	2,690	2,320	2,590	1,500	752	547	*409
25	320	320	898	7,390	1,590	3,160	2,170	2,890	1,610	716	621	398
26	306	310	826	6,160	1,520	2,650	2,220	2,410	1,540	702	711	387
27	297	310	789	4,920	1,480	2,460	2,940	3,190	1,530	681	1,050	404
28	288	297	782	5,280	1,520	2,720	3,340	2,850	1,540	654	902	634
29	315	302	1,090	6,140	-	2,610	2,740	2,620	1,470	640	745	553
30	426	306	1,540	6,230	-	2,380	2,460	2,480	1,560	634	647	869
31	414	-	1,500	7,690	-	2,310	-	2,220	-	614	608	-
Total	9,728	11,061	37,795	206,380	98,740	58,160	56,120	69,750	53,450	33,339	18,000	14,419
Mean	314	369	1,219	6,657	3,526	1,876	1,871	2,250	1,782	1,075	581	481
Cfsm	0.662	0.778	2.57	14.0	7.44	3.96	3.95	4.75	3.76	2.27	1.23	1.01
In.	0.76	0.87	2.97	16.19	7.75	4.56	4.40	5.47	4.19	2.62	1.41	1.13
Ac-ft	19,300	21,940	74,970	409,300	195,800	115,400	111,300	138,300	106,000	66,130	35,700	28,600

Calendar year 1952: Max 10,500 Min 288 Mean 1,338 Cfsm 2.82 In. 38.42 Ac-ft 971,100
Water year 1952-53: Max 14,000 Min 288 Mean 1,827 Cfsm 3.85 In. 52.32 Ac-ft 1,323,000

Peak discharge (base, 9,000 cfs).--Jan. 9 (8 p.m.) 11,300 cfs (9.25 ft); Jan. 11 (8:30 p.m.) 11,300 cfs (9.25 ft); Jan. 19 (3 a.m.) 15,600 cfs (11.86 ft); Jan. 23 (3 a.m.) 11,700 cfs (9.51 ft); Feb. 1 (12:30 a.m.) 11,900 cfs (9.62 ft).
* Discharge measurement made on this day.
Note.--Auxiliary gage record used Nov. 17-20, Dec. 17 to Jan. 12, Jan. 18 to Feb. 18.

Cowlitz River at Castle Rock, Wash.

Location.--Lat 46°16'30", long. 122°55'00", in SE¼ sec. 10, T. 9 N., R. 2 W., on right bank at highway bridge in Castle Rock, 2½ miles downstream from Toutle River and 14 miles upstream from mouth.

Drainage area.--2,238 sq mi.

Records available.--December 1926 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 19.73 ft above mean sea level, datum of 1929. Prior to Dec. 18, 1933, staff gage at site 2 miles upstream at different datum. Dec. 18, 1933, to June 13, 1934, staff or wire-weight gages on highway bridge at datum 5 ft higher.

Average discharge.--26 years (1927-53), 8,772 cfs.

Extremes.--Maximum discharge during year, 60,000 cfs probably Feb. 1 (gage height, 20.77 ft, from recorded range in stage); minimum, 1,050 cfs Nov. 30 (gage height, 6.67 ft).
1926-53: Maximum discharge observed, 139,000 cfs Dec. 23, 1933 (gage height, 31.6 ft, present datum), from rating curve extended above 65,000 cfs; minimum, 998 cfs Nov. 7, 8, 1935.

Remarks.--Records excellent except those for periods of no gage-height record, which are good. No diversion or regulation. Records of water temperatures for the water year 1953 are given in WSP 1293.

Revisions.--WSP 1218: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

6.7	1,090	12.5	16,900
7.3	1,920	14.0	23,000
8.0	3,200	16.0	32,200
9.0	5,450	18.0	42,700
10.0	8,200	20.0	54,700
11.0	11,300		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,470	1,500	1,140	4,540	50,000	6,040	8,710	12,400	11,200	8,650	3,740	2,700
2	1,470	1,430	1,200	6,520	42,000	5,730	7,930	11,000	10,400	8,320	3,610	2,640
3	1,480	1,310	1,380	9,000	35,000	5,450	7,410	9,880	10,200	9,010	3,570	2,580
4	1,470	1,250	2,510	9,670	35,000	5,250	6,980	9,490	9,940	9,760	3,590	2,480
5	1,440	1,220	3,320	7,900	31,000	5,060	6,760	11,000	9,880	9,550	3,530	2,390
6	1,430	1,200	2,730	6,600	27,000	4,940	6,520	14,600	9,940	9,520	3,440	2,310
7	1,440	1,200	3,180	6,930	27,000	4,820	6,250	*17,300	11,500	10,200	3,570	2,310
8	1,430	1,170	4,380	13,300	28,000	4,820	6,120	17,400	12,600	11,200	3,530	2,330
9	1,420	1,160	3,970	*22,500	24,000	5,060	*6,010	15,300	11,800	11,900	3,400	2,300
10	1,400	1,190	4,110	31,200	21,000	5,600	5,730	12,900	11,100	10,400	3,280	2,240
11	1,400	1,300	4,040	27,000	19,000	6,250	5,520	11,000	10,800	9,550	3,160	2,210
12	1,390	1,460	5,300	40,000	17,500	7,180	5,910	9,880	11,900	9,220	3,100	2,210
13	1,380	1,570	7,490	38,000	16,000	6,980	5,960	9,460	14,600	9,010	3,020	2,240
14	1,370	1,720	6,360	30,000	15,000	6,410	5,930	9,820	15,700	8,800	2,960	2,300
15	1,330	1,840	5,100	25,000	14,000	6,220	5,650	10,400	*13,400	8,350	2,900	2,230
16	1,290	1,580	4,350	27,000	13,000	7,490	5,520	10,200	12,500	*7,550	2,940	2,190
17	1,280	1,420	3,820	35,000	13,000	8,890	5,580	10,300	12,000	6,650	2,960	2,120
18	1,280	1,340	3,440	44,000	11,000	8,200	5,580	11,000	12,100	6,440	2,830	2,040
19	1,280	1,290	3,120	48,000	*9,940	7,780	5,680	13,000	11,500	6,380	2,750	1,950
20	1,290	*1,260	2,920	40,000	9,460	7,260	6,440	15,100	10,600	5,960	*2,770	1,950
21	1,310	1,250	2,960	35,000	8,770	8,960	8,020	14,100	9,760	5,450	2,830	1,920
22	1,330	1,220	3,860	32,000	8,350	7,350	9,880	13,300	9,010	5,220	2,730	1,920
23	1,310	1,210	4,110	38,000	7,930	8,680	11,600	11,900	8,710	5,080	2,600	1,920
24	1,400	1,170	3,500	37,000	7,290	9,460	13,400	12,800	8,710	4,860	2,700	1,920
25	1,400	1,160	3,060	35,000	6,900	12,100	13,100	12,900	8,620	4,630	2,810	1,890
26	1,340	1,150	2,790	29,000	6,490	10,700	12,600	11,100	8,470	4,440	2,850	1,810
27	1,260	1,140	2,620	25,000	6,270	9,850	14,300	12,000	8,290	4,220	3,480	1,790
28	1,240	1,130	2,550	24,000	6,270	10,400	18,300	12,800	8,440	4,040	3,820	2,120
29	1,240	1,100	3,260	28,000	-	9,940	17,000	12,800	8,290	3,970	3,550	2,510
30	1,310	1,100	4,060	33,000	-	9,280	14,400	13,300	8,560	3,860	3,060	*2,660
31	1,330	-	4,540	40,000	-	9,430	-	12,500	-	3,890	2,810	-
Total	42,210	39,040	111,170	828,160	516,170	229,580	258,790	380,930	320,520	226,080	97,890	66,180
Mean	1,362	1,301	3,586	26,710	18,430	7,406	8,626	12,290	10,680	7,293	3,158	2,206
Cfsm	0.609	0.581	1.60	11.9	8.24	3.31	3.85	5.49	4.77	3.26	1.41	0.986
In.	0.70	0.65	1.85	13.76	8.58	3.82	4.30	6.33	5.33	3.76	1.63	1.10
Ac-ft	83,720	77,430	220,500	‡1,643	‡1,024	455,400	513,300	755,600	635,700	448,400	194,200	131,300

Calendar year 1952: Max 35,600 Min 1,100 Mean 6,179 Cfsm 2.76 In. 37.59 Ac-ft 4,486,000
Water year 1952-53: Max 50,000 Min 1,100 Mean 8,539 Cfsm 3.82 In. 51.81 Ac-ft 6,183,000

Peak discharge (base, 32,000 cfs).--Jan. 10 (5 to 6 a.m.) 33,700 cfs (16.30 ft); probably Jan. 12 (time and discharge unknown); probably Jan. 19 (time and discharge unknown); probably Feb. 1 (time unknown) 60,000 cfs (20.77 ft).

* Discharge measurement made on this day.
‡ Expressed in thousands.

Note.--No gage-height record Jan. 3, Jan. 11 to Feb. 18; discharge estimated on basis of recorded range in stage and records for stations near Kosmos and near Mayfield.

Arkansas Creek near Castle Rock, Wash.

Location.--Lat 46°15'50", long. 122°58'00", in W½ sec. 17, T. 9 N., R. 2 W., on right bank 3 miles upstream from mouth and 3 miles west of Castle Rock.

Drainage area.--19.4 sq mi.

Records available.--May 1949 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 75 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,250 cfs Jan. 22 (gage height, 4.95 ft); minimum, 1.9 cfs Oct. 2, 3, 4, 7 (gage height, 0.73 ft).
1949-53: Maximum discharge, 1,790 cfs Feb. 24, 1950 (gage height, 5.77 ft); minimum, 1.3 cfs Aug. 22, 1951 (gage height, 0.63 ft).

Remarks.--Records good. Some diversion for domestic use. No regulation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.7	1.6	2.3	110
.9	4.1	2.6	163
1.1	8.5	3.0	260
1.4	20	3.5	420
1.7	41	4.0	640
2.0	70	4.6	1,000

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.4	8.5	5.8	85	532	65	96	77	35	16.5	5.4	9.4
2	2.0	6.0	11	204	410	62	90	70	35	16	5.0	8.2
3	2.0	5.0	27	218	406	57	83	66	33	15	5.4	6.4
4	2.0	4.5	41	165	368	55	78	61	32	15	5.8	5.6
5	2.1	4.3	31	128	344	55	72	56	34	13.5	6.0	5.0
6	2.0	4.5	33	107	314	52	68	54	39	12.5	6.0	5.0
7	2.0	4.3	74	156	329	49	63	56	39	11	6.0	5.4
8	2.2	4.1	113	269	290	47	63	*59	35	11	5.4	6.0
9	2.4	4.1	91	*287	240	46	*58	53	31	11	5.4	5.2
10	2.4	5.2	94	232	203	54	55	48	29	11	5.0	4.3
11	2.6	8.5	80	346	165	59	55	46	27	10.5	4.0	4.3
12	2.4	10.5	184	350	140	61	60	43	*26	9.7	3.8	5.0
13	2.4	14	130	305	123	57	63	40	26	11	3.5	4.5
14	2.1	19.5	87	293	113	55	58	39	24	11.5	3.4	4.0
15	2.1	15.5	66	340	115	66	56	38	23	10.5	3.5	3.5
16	2.1	9.4	55	527	198	104	58	36	22	*9.4	4.0	3.6
17	2.2	7.2	46	492	213	108	57	35	21	8.5	4.1	3.8
18	2.2	6.2	39	497	*176	118	53	50	22	8.5	4.0	3.5
19	2.3	5.8	36	605	150	120	51	47	26	8.5	3.8	3 5
20	2.8	*5.2	34	500	135	112	48	41	25	8.5	*3.5	3.4
21	3.6	4.8	45	416	118	112	48	56	23	7.7	3.4	3.2
22	3.4	4.6	95	700	110	126	47	56	20	7.7	3.2	3.6
23	3.6	4.6	76	*936	98	140	51	59	19.5	7.7	3.2	*5.0
24	7.0	4.6	62	536	90	152	46	60	20	7.0	10.5	4.1
25	4.8	4.6	52	432	82	144	46	55	20	7.0	10.5	4.0
26	4.0	4.6	47	382	77	130	58	52	19.5	7.2	36	4.1
27	3.8	4.5	42	341	74	123	101	50	20	6.4	34	4.5
28	3.8	4.3	45	478	69	121	92	46	20	6.0	18.5	16
29	4.8	4.1	61	572	-	104	86	44	19.5	6.2	15	8.5
30	7.4	4.6	81	540	-	115	82	40	18	6.2	10.5	33
31	8.2	-	83	611	-	102	-	38	-	6.0	9.1	-
Total	99.1	197.6	1,966.8	12,050	5,682	2,771	1,942	1,571	783.5	304.2	246.9	185.6
Mean	3.20	6.59	63.4	389	203	89.4	64.7	50.7	26.1	9.81	7.96	6.19
Cfsm	0.165	0.340	3.27	20.1	10.5	4.61	3.34	2.61	1.35	0.506	0.410	0.319
In.	0.19	0.38	3.77	23.10	10.89	5.31	3.72	3.01	1.50	0.58	0.47	0.36
Ac-ft	197	392	3,900	23,900	11,270	5,500	3,850	3,120	1,550	603	490	368

Calendar year 1952: Max 590 Min 1.9 Mean 44.3 Cfsm 2.28 In. 31.12 Ac-ft 32,190
Water year 1952-53: Max 936 Min 2.0 Mean 76.2 Cfsm 3.93 In. 53.28 Ac-ft 55,140

Peak discharge (base, 1,000 cfs).--Jan. 22 (11 p.m.) 1,250 cfs (4.95 ft).
* Discharge measurement made on this day.

Coweman River near Kelso, Wash.

Location.--Lat 46°07'40", long. 122°50'10", in S½ sec. 32, T. 8 N., R. 1 W., on right bank 3 miles downstream from Goble Creek, 3.8 miles southeast of Kelso, and 5½ miles upstream from mouth.

Drainage area.--119 sq mi.

Records available.--July 1950 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 100 ft (from topographic map).

Extremes.--Maximum discharge during year, 4,910 cfs Jan. 22 (gage height, 11.15 ft); minimum, 24 cfs Oct. 7 (gage height, 3.75 ft).

1950-53: Maximum discharge, that of Jan. 22, 1953; minimum, 22 cfs Sept. 22, 1951; minimum gage height, 3.75 ft Sept. 22, 1951, Oct. 7, 1952.

Flood of Feb. 24, 1950, reached a stage of 12.8 ft, from floodmarks (discharge, 7,730 cfs, from rating curve extended above 2,200 cfs on basis of slope-area determination of peak flow).

Remarks.--Records good. No known diversion or regulation. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

3.7	20	6.5	780
4.0	47	7.0	1,040
4.5	116	8.0	1,690
5.0	225	9.0	2,500
6.0	560	10.0	3,500

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*27	52	b50	456	*1,900	304	564	402	316	156	62	68
2	27	40	118	670	1,430	289	508	388	289	146	59	67
3	26	35	174	830	1,550	271	452	358	265	142	59	61
4	26	33	540	658	1,540	256	412	334	248	136	63	55
5	25	33	448	520	1,330	248	388	322	245	127	62	50
6	25	32	393	433	1,120	242	377	316	286	118	63	48
7	24	32	850	640	1,200	235	355	331	*448	113	68	49
8	25	31	760	1,150	1,110	238	364	*331	492	*111	61	52
9	26	30	612	1,490	880	242	358	295	426	106	62	50
10	*27	32	785	1,240	726	262	349	271	391	102	58	46
11	28	59	580	1,290	608	316	367	250	334	98	54	45
12	28	*82	829	1,520	528	394	468	235	307	94	50	45
13	28	122	726	1,350	468	364	488	222	292	94	*48	45
14	27	141	508	1,120	444	340	440	240	256	116	46	44
15	25	128	380	992	460	367	402	222	232	106	45	42
16	25	78	307	2,150	735	752	391	215	218	94	51	42
17	25	62	259	2,480	910	810	380	205	202	85	50	42
18	26	52	222	2,560	740	780	343	250	198	84	46	*40
19	25	49	198	2,870	608	755	331	337	225	85	45	40
20	28	48	188	2,550	*540	654	325	367	238	82	48	42
21	35	46	222	2,120	472	600	325	576	210	77	51	40
22	31	43	568	2,830	448	730	313	572	190	74	46	40
23	31	42	472	3,460	408	*855	322	524	181	77	45	44
24	64	38	355	2,040	380	905	298	685	193	71	75	44
25	40	b37	283	1,810	355	998	280	624	212	71	85	40
26	32	b36	240	1,690	334	815	304	544	202	71	114	40
27	31	b35	225	1,370	325	703	412	592	200	68	183	44
28	30	b34	220	1,910	328	770	436	512	198	67	134	92
29	32	b35	*426	2,140	-	690	398	452	186	66	102	74
30	50	b36	516	1,900	-	680	408	405	167	66	77	168
31	63	-	492	1,820	-	628	-	355	-	66	68	-
Total	962	1,553	12,946	50,059	21,877	16,493	11,558	11,732	7,847	2,969	2,080	1,599
Mean	31.0	51.8	418	1,615	781	532	385	378	262	95.8	67.1	53.3
Cfsm	0.261	0.435	3.51	13.6	6.56	4.47	3.24	3.18	2.20	0.805	0.564	0.448
In.	0.30	0.49	4.05	15.64	6.84	5.15	3.61	3.67	2.45	0.93	0.65	0.50
Ac-ft	1,910	3,080	25,680	99,290	43,390	32,710	22,920	23,270	15,560	5,890	4,130	3,170

Calendar year 1952: Max 2,500 Min 23 Mean 255 Cfsm 2.14 In. 29.23 Ac-ft 185,400
Water year 1952-53: Max 3,460 Min 24 Mean 388 Cfsm 3.26 In. 44.28 Ac-ft 281,000

Peak discharge (base, 2,600 cfs).--Jan. 19 (2 a.m.) 3,240 cfs (9.76 ft); Jan. 22 (10:30 p.m.) 4,910 cfs (11.15 ft).

* Discharge measurement made on this day.

b Stage-discharge relation affected by ice.

Abernathy Creek near Longview, Wash.

Location.--Lat 46°12'10", long. 123°09'15", in SE¼ sec. 3, T. 8 N., R. 4 W., on left bank 1 mile upstream from mouth and 11 miles northwest of Longview.

Drainage area.--20.3 sq mi.

Records available.--April 1949 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is about 70 ft (from topographic map).

Extremes.--Maximum discharge during year, 1,650 cfs Jan. 22 (gage height, 5.57 ft), from rating curve extended above 650 cfs; minimum, 3.6 cfs Oct. 5 (gage height, 0.94 ft).
1949-53: Maximum discharge, 2,700 cfs Feb. 24, 1950 (gage height, 6.66 ft), from rating curve extended above 650 cfs; minimum, that of Oct. 5, 1952.

Remarks.--Records good. Some diversion for domestic use. Possibly slight regulation. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.9	2.9	2.4	127
1.1	7.4	2.7	185
1.3	14.5	3.0	260
1.5	26	3.5	419
1.8	50	4.0	628
2.1	83	5.0	1,210

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.6	12	8.0	86	610	72	111	88	45	25	11	16
2	4.2	8.6	17.5	225	449	69	104	83	43	23	11	14
3	4.4	7.7	39	216	423	67	96	77	42	22	11	11.5
4	4.6	7.1	72	166	367	62	90	72	40	22	12.5	11
5	4.8	6.9	56	134	337	62	84	68	43	20	16	10
6	4.6	6.9	62	110	315	60	82	63	49	19.5	14	10
7	4.8	6.9	125	140	340	57	77	*67	54	18.5	13.5	11
8	5.1	6.6	145	*210	294	56	*75	78	47	19	11.5	11
9	5.3	6.6	119	238	255	55	69	70	42	18.5	11.5	10
10	5.6	7.4	125	194	216	57	63	63	39	18	11	9.5
11	5.3	12.5	100	300	179	64	64	60	36	17.5	9.5	9.2
12	5.3	13	227	282	151	65	73	57	*37	17	9.2	10
13	5.1	20	147	260	132	62	78	55	36	18	9.2	9.5
14	4.8	26	100	285	125	53	75	53	34	19.5	8.8	8.8
15	4.6	20	78	348	131	68	69	51	33	*18.5	8.8	8.8
16	5.1	13.5	64	525	208	122	71	49	32	17	9.2	8.8
17	5.1	11	54	517	*213	121	72	47	31	15.5	9.2	8.6
18	5.1	9.8	47	542	179	132	65	56	31	15	9.8	8.6
19	5.3	*9.2	43	652	158	134	63	56	34	15	*9.2	8.2
20	5.8	8.6	40	517	143	125	60	57	36	14.5	8.8	8.2
21	7.1	8.2	50	430	129	122	59	75	34	14	9.2	8.0
22	6.3	8.0	98	825	124	140	58	75	31	13.5	8.6	8.0
23	7.1	8.0	82	1,100	111	154	63	73	30	13	9.5	*9.5
24	11	8.0	69	605	102	160	59	70	30	13	20	8.6
25	7.7	8.0	61	460	92	151	59	64	30	13.5	18.5	8.2
26	6.9	7.7	55	394	86	138	71	60	30	13.5	25	8.2
27	6.3	7.4	52	357	82	131	154	59	29	12.5	42	9.2
28	6.3	7.1	51	534	78	134	124	55	30	12.5	26	28
29	7.7	6.9	72	633	-	119	110	53	28	11.5	21	14.5
30	11	6.9	83	551	-	125	99	50	26	11.5	16	43
31	13.5	-	81	715	-	117	-	47	-	11	15	-
Total	190.4	296.5	2,422.5	12,551	6,029	3,054	2,397	1,951	1,082	512.5	425.5	347.9
Mean	6.14	9.88	78.1	405	215	98.5	79.9	62.9	36.1	16.5	13.7	11.6
Cfsm	0.302	0.487	3.85	20.0	10.6	4.85	3.94	3.10	1.78	0.813	0.675	0.571
In.	0.35	0.54	4.44	22.99	11.05	5.59	4.39	3.57	1.98	0.94	0.78	0.64
Ac-ft	378	588	4,800	24,890	11,960	6,060	4,750	3,870	2,150	1,020	844	690

Calendar year 1952: Max 962 Min 4.2 Mean 56.4 Cfsm 2.78 In. 37.85 Ac-ft 40,970
Water year 1952-53: Max 1,100 Min 4.2 Mean 85.6 Cfsm 4.22 In. 57.26 Ac-ft 62,000

Peak discharge (base, 1,100 cfs).--Jan. 22 (10:30 a.m.) 1,650 cfs (5.57 ft).
* Discharge measurement made on this day.

Clatskanie River near Clatskanie, Oreg.

Location.--Lat 46°02'55", long. 123°07'05", in sec. 36, T. 7 N., R. 4 W., on left bank 2 miles downstream from Carcus Creek and 5½ miles southeast of Clatskanie.

Drainage area.--53.0 sq mi.

Records available.--August 1949 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 240 ft (by barometer). Prior to Apr. 25, 1951, at site 700 ft downstream at different datum.

Extremes.--Maximum discharge during year, 948 cfs Jan. 20 (gage height, 3.26 ft); minimum, 3.0 cfs Nov. 26.
1949-53: Maximum discharge, 2,000 cfs Feb. 24, 1950 (gage height, 5.29 ft, site and datum then in use); minimum, that of Nov. 26, 1952.

Remarks.--Records good except those for periods of backwater from debris or shifting control, which are fair. No diversion above station; occasional slight regulation by log ponds. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating tables, water year 1952-53, except periods of backwater from debris or shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
0.2	2.3	0.8	59	0.3	4.4	1.3	130
.3	5.9	1.3	158	.4	8.4	1.8	282
.4	12	2.0	365	.5	14	2.5	570
.5	20	3.0	775	.7	30	3.2	915
				.9	54		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.8	9.0	6.5	153	424	110	130	142	39	27	8.4	10
2	*4.8	8.3	14	224	420	102	121	121	36	24	8.4	9.5
3	4.8	7.7	24	277	408	92	115	104	34	23	8.4	*8.9
4	4.8	7.7	48	257	416	79	102	92	33	21	9.5	8.4
5	4.5	7.1	35	221	428	74	92	84	37	20	9.5	8.0
6	4.5	6.5	39	183	404	68	88	77	50	18	9.5	7.6
7	4.5	6.5	110	226	400	65	81	75	49	16	9.5	8.0
8	4.8	6.5	133	365	344	62	81	67	45	16	9.5	8.4
9	4.8	6.5	112	*527	290	62	77	60	41	16	9.5	8.0
10	5.2	7.1	144	451	*239	67	65	51	*41	15	8.4	7.6
11	5.2	7.7	118	507	192	70	64	46	42	14	8.0	7.6
12	5.2	8.3	97	543	155	68	70	44	84	13	7.6	8.9
13	5.2	12	73	435	130	64	68	41	83	14	7.2	8.0
14	5.2	*15	59	340	121	57	64	42	72	15	7.2	7.6
15	5.2	12	49	277	135	59	60	40	64	14	7.2	7.6
16	5.2	7.7	41	464	198	*86	60	38	56	13	7.6	7.6
17	5.2	5.9	*37	631	328	110	64	37	50	12	7.6	7.6
18	5.2	5.5	34	685	356	155	56	38	44	12	7.6	7.6
19	5.2	5.2	31	871	320	207	51	42	41	12	7.6	7.6
20	5.5	5.2	29	871	293	220	48	39	39	11	7.6	7.2
21	6.5	4.8	35	810	253	216	46	46	38	11	7.6	7.2
22	5.9	4.8	118	*735	233	239	45	45	33	*11	7.2	7.6
23	6.5	4.5	163	745	201	309	45	45	31	10	7.2	7.6
24	9.6	4.1	140	579	177	328	41	50	28	10	9.5	7.6
25	8.3	4.5	114	556	163	324	39	50	28	10	10	7.2
26	7.1	4.1	93	602	142	282	49	49	27	10	16	7.2
27	6.5	4.5	79	*566	130	235	112	50	27	10	17	9
28	6.5	4.5	70	561	121	216	150	49	29	9.5	14	10
29	7.7	4.7	97	525	-	172	*175	48	34	8.9	13	10
30	10	5.2	135	432	-	158	163	45	30	8.9	11	15
31	10	-	153	408	-	145	-	42	-	8.9	10	-
Total	184.4	203.1	2,430.5	15,027	7,421	4,501	2,422	1,799	1,285	434.2	288.3	250.1
Mean	5.95	6.77	78.4	485	265	145	80.7	58.0	42.8	14.0	9.30	8.34
Cfsm	0.112	0.128	1.48	9.15	5.00	2.74	1.52	1.09	0.808	0.264	0.175	0.157
In.	0.13	0.14	1.71	10.54	5.21	3.16	1.70	1.26	0.90	0.30	0.20	0.18
Ac-ft	366	403	4,820	29,810	14,720	8,930	4,800	3,570	2,550	861	572	496

Calendar year 1952: Max 888 Min 4.1 Mean 73.9 Cfsm 1.39 In. 18.97 Ac-ft 53,610
Water year 1952-53: Max 871 Min 4.1 Mean 99.3 Cfsm 0.187 In. 25.43 Ac-ft 71,900

Peak discharge (base, 700 cfs).--Jan. 20 (10:30 p.m.) 948 cfs (3.26 ft).
* Discharge measurement made on this day.
Note.--Backwater from debris or shifting-control method used Oct. 21 to Dec. 9, Jan. 8-18, Feb. 15 to Mar. 23.

Mill Creek near Cathlamet, Wash.

Location.--Lat 46°11'40", long. 123°11'25", in NW¼ sec. 9, T. 8 N., R. 4 W., on left bank 50 ft downstream from bridge, three-quarters of a mile upstream from mouth, and 9½ miles east of Cathlamet.

Drainage area.--27.6 sq mi.

Records available.--June 1949 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 70 ft (by barometer).

Extremes.--Maximum discharge during year, 1,710 cfs Jan. 22 (gage height, 4.90 ft); minimum, 4.8 cfs Oct. 1, 2, 3, 4, 5, 6, 7 (gage height, 1.20 ft).
1949-53: Maximum discharge, 4,460 cfs Feb. 24, 1950 (gage height, 6.23 ft), from rating curve extended above 590 cfs by logarithmic plotting; minimum, 4.6 cfs Aug. 21, 22, 1951 (gage height, 1.19 ft).

Remarks.--Records good except those for periods of ice effect or no gage-height record, which are fair. No diversion or regulation.

Rating table, water year 1952-53, except periods of ice effect (gage height, in feet, and discharge, in cubic feet per second)

1.2	4.8	2.6	153
1.4	10.5	2.9	235
1.6	20	3.2	335
1.8	34	3.5	475
2.0	52	3.9	720
2.3	93	4.4	1,130

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.2	13	9.6	92	566	88	126	96	46	28	12.5	15
2	5.0	9.0	18	211	464	82	120	88	45	27	12.5	14
3	5.0	8.0	43	199	436	78	114	81	44	25	13	12.5
4	5.0	7.0	72	165	393	74	107	75	43	25	13.5	11
5	5.0	7.0	57	139	363	71	103	70	45	24	14	10.5
6	4.8	7.0	70	122	347	68	102	67	52	22	14.5	10.5
7	5.0	7.0	130	153	343	65	*95	*72	60	22	14.5	11
8	5.2	6.6	165	*232	300	62	92	86	55	21	13.5	11
9	5.5	6.8	137	259	256	60	82	74	52	21	13	10.5
10	5.5	8.0	126	217	223	64	78	65	49	20	12	9.9
11	5.5	12	102	286	191	72	78	62	*46	19.5	11	9.9
12	5.5	13.5	154	272	170	72	88	58	48	19.5	10.5	10.5
13	5.2	15	116	256	148	70	88	57	47	20	10.5	9.9
14	5.0	25	90	265	148	65	82	57	43	21	9.9	9.2
15	5.0	20	74	290	158	80	78	52	40	*20	10.5	9.2
16	5.0	15	63	458	205	142	81	49	40	18.5	10.5	8.9
17	5.2	12	54	519	220	139	82	46	39	17.5	10.5	8.9
18	5.2	11	47	558	*197	148	75	52	38	16.5	10.5	8.3
19	5.5	*9.9	44	678	175	151	70	58	42	16.5	*9.9	8.6
20	5.5	9.6	41	554	163	146	67	60	42	16	9.6	8.3
21	7.0	9.6	49	502	148	144	65	74	39	15.5	9.6	8.3
22	6.5	9.2	122	901	148	165	64	78	36	15.5	9.2	8.9
23	7.6	8.9	105	1,090	130	175	68	72	35	15.5	10.5	*10.5
24	10	8.9	88	530	120	183	62	67	35	15	22	9.6
25	7.6	8.9	77	497	110	172	62	62	35	15.5	22	8.9
26	7.0	8.9	68	436	105	158	81	58	33	15.5	25	8.6
27	6.4	8.6	62	388	100	151	151	55	34	14.5	33	8.9
28	6.4	b8.3	62	586	93	153	124	53	34	14	27	22
29	8.0	b8.3	80	596	-	135	110	50	32	13.5	22	16
30	11	b8.6	82	519	-	144	103	48	30	13	17	32
31	13.5	-	80	602	-	135	-	47	-	12.5	15.5	-
Total	194.8	310.6	2,487.6	12,572	6,420	3,512	2,698	1,989	1,259	580.0	449.2	341.3
Mean	6.28	10.4	80.2	406	229	113	89.9	64.2	42.0	18.7	14.5	11.4
Cfsm	0.228	0.377	2.91	14.7	8.30	4.09	3.26	2.33	1.52	0.678	0.525	0.413
In.	0.26	0.42	3.35	16.94	8.65	4.73	3.64	2.68	1.70	0.78	0.61	0.46
Ac-ft	386	616	4,930	24,940	12,730	6,970	5,350	3,950	2,500	1,150	891	677

Calendar year 1952: Max 1,010 Min 4.8 Mean 64.5 Cfsm 2.34 In. 31.83 Ac-ft 46,860
Water year 1952-53: Max 1,090 Min 4.8 Mean 89.9 Cfsm 3.26 In. 44.22 Ac-ft 65,090

Peak discharge (base, 1,000 cfs).--Jan. 22 (9:30 p.m.) 1,710 cfs (4.90 ft).
* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.--No gage-height record Oct. 21 to Nov. 18, May 16 to June 3, June 5-10; discharge estimated on basis of recorded range in stage and records for nearby stations.

Elokomin River near Cathlamet, Wash.

Location.--Lat 46°13'10", long. 123°20'30", in SE¼ sec. 31, T. 9 N., R. 5 W., on right bank 125 ft upstream from railroad bridge, 2 miles northeast of Cathlamet, and 4 miles upstream from mouth.

Drainage area.--65.8 sq mi.

Records available.--October 1940 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 29.60 ft above mean sea level, datum of 1929. Prior to June 25, 1941, staff gage at same site and datum.

Average discharge.--13 years, 359 cfs.

Extremes.--Maximum discharge during year, 5,040 cfs Jan. 22 (gage height, 10.10 ft), from rating curve extended above 1,700 cfs on basis of slope-area determination at gage height 12.66 ft; minimum, 18 cfs Oct. 6, 7, 15, 16 (gage height, 1.80 ft).
1940-53: Maximum discharge, 7,300 cfs Feb. 17, 1949 (gage height, 12.66 ft), from rating curve extended above 2,000 cfs on basis of slope-area determination of peak flow; minimum, that of Oct. 6, 7, 15, 16, 1952.
Maximum stage known, 17.2 ft in December 1933, from information by local residents.

Remarks.--Records good except those for period of shifting control, which are fair. Some diversions for irrigation. No regulation. Records of water temperatures for the water year 1953 are given in WSP 1293.

Revisions (water years).--WSP 1154: 1948. WSP 1218: Drainage area.

Rating table, water year 1952-53, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

1.8	18	4.0	630
2.0	40	4.5	865
2.2	68	5.0	1,150
2.5	125	5.5	1,470
2.8	198	6.0	1,820
3.1	288	7.0	2,520
3.4	390	8.0	3,280
3.7	505	9.0	4,080

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	50	38	437	2,340	269	386	314	185	91	44	49
2	19	35	84	1,030	*1,700	256	355	285	175	87	43	45
3	19	31	191	1,020	1,620	241	335	262	167	83	44	40
4	20	30	425	756	1,390	229	304	238	160	80	45	37
5	19	31	355	594	1,250	226	285	218	170	76	48	35
6	19	31	369	493	1,170	212	275	204	193	71	46	35
7	18	30	688	644	1,260	201	*253	*218	193	70	48	37
8	*20	28	780	*1,090	1,080	193	247	282	177	68	44	38
9	20	28	657	1,270	890	185	238	247	162	68	43	34
10	20	31	760	1,020	752	198	223	218	158	65	40	33
11	20	52	621	1,590	644	241	226	201	*146	64	37	32
12	20	62	1,110	1,380	561	247	266	185	146	64	35	33
13	20	91	780	1,110	501	241	291	175	153	65	35	32
14	19	121	549	1,190	485	220	278	167	134	*71	34	31
15	18	121	411	1,380	501	300	253	158	125	66	34	31
16	19	65	331	2,130	832	594	250	150	119	62	35	31
17	20	50	272	2,040	815	545	247	141	114	59	37	30
18	19	44	229	2,200	670	569	223	188	112	56	35	30
19	19	*40	209	2,630	577	549	209	223	127	56	*34	30
20	21	38	188	1,830	529	497	198	256	141	54	35	28
21	26	35	238	1,390	473	457	195	362	123	53	34	28
22	24	34	453	2,530	461	537	190	386	110	52	32	28
23	24	34	362	3,820	411	594	226	366	108	52	35	*32
24	39	33	298	2,280	376	577	201	355	108	50	56	31
25	30	33	256	1,760	345	517	193	321	106	50	52	30
26	26	32	229	1,520	321	*449	250	288	106	50	68	28
27	24	31	215	1,460	304	433	517	272	110	49	134	31
28	23	31	234	2,170	288	469	429	250	110	49	76	124
29	26	30	376	2,440	-	404	369	232	100	48	65	64
30	41	30	453	2,250	-	437	348	215	96	46	52	202
31	53	-	429	2,830	-	414	-	198	-	45	49	-
Total	725	1,332	12,590	50,284	22,546	11,501	8,260	7,575	4,134	1,920	1,449	1,289
Mean	23.4	44.4	406	1,622	805	371	275	244	138	61.9	46.7	43.0
Cfsm	0.356	0.675	6.17	24.7	12.2	5.64	4.18	3.71	2.10	0.941	0.710	0.653
In.	0.41	0.75	7.12	28.42	12.74	6.50	4.67	4.28	2.34	1.09	0.82	0.73
Ac-ft	1,440	2,640	24,970	99,740	44,720	22,810	16,380	15,020	8,200	3,810	2,870	2,560

Calendar year 1952: Max 3,340 Min 18 Mean 227 Cfsm 3.45 In. 46.92 Ac-ft 164,600
Water year 1952-53: Max 3,820 Min 18 Mean 339 Cfsm 5.15 In. 69.87 Ac-ft 245,200

Peak discharge (base, 3,600 cfs).--Jan. 22 (11:15 p.m.) 5,040 cfs (10.10 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used Mar. 21 to May 17.

Big Creek near Knappa, Oreg.

Location.--Lat 46°09'00", long. 123°35'00" (revised), in NW¼ sec. 29, T. 8 N., R. 7 W., on left bank 0.3 mile downstream from fish hatchery and 2½ miles south of Knappa.

Drainage area.--31.9 sq mi.

Records available.--August 1949 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 100 ft (by barometer).

Extremes.--Maximum discharge during year, 1,220 cfs Jan. 9; maximum gage height, 2.69 ft Jan. 8; minimum discharge, about 7 cfs Oct. 10, when filling of tanks at fish hatchery lowered water surface slightly below inlets.
1949-53: Maximum discharge, 2,130 cfs Feb. 24, 1950 (gage height, 4.01 ft); minimum, that of Oct. 10, 1952.

Remarks.--Records good. Occasional regulation by fish hatchery above station. Records of water temperatures for the water year 1952 are given in WSP 1293.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 8				Jan. 9 to Sept. 30			
0.2	14	1.0	170	0.2	25	1.5	380
.5	51	1.5	360	.4	40	2.0	680
.7	87	2.0	630	.6	70	2.6	1,170
				1.0	172		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	30	27	221	515	148	204	128	85	63	35	35
2	*18	24	50	375	463	137	190	120	80	60	35	34
3	18	22	100	328	446	128	176	120	78	56	35	*33
4	18	22	200	255	420	126	163	110	76	55	36	31
5	18	21	118	200	415	120	160	103	80	53	36	30
6	17	21	158	167	410	118	166	98	85	52	36	30
7	18	21	307	271	400	113	151	105	83	49	36	30
8	20	21	267	606	345	108	151	128	76	49	36	30
9	20	21	210	*1,110	308	105	148	134	76	48	35	30
10	20	23	214	680	*269	105	139	115	*74	46	34	29
11	20	36	170	659	241	120	142	108	67	45	33	29
12	20	35	188	533	222	142	163	101	67	45	33	29
13	20	47	146	485	204	128	172	98	67	46	32	29
14	17	*65	120	441	222	120	172	98	62	46	32	28
15	18	43	97	420	241	179	160	93	62	45	32	28
16	18	29	85	617	375	*474	154	87	60	43	32	28
17	20	25	*75	659	365	355	148	85	60	40	32	28
18	18	23	71	732	303	330	137	101	58	41	32	28
19	20	23	69	878	273	308	128	108	63	41	32	28
20	20	23	64	652	241	285	120	103	68	40	32	28
21	21	22	79	571	222	303	120	123	63	39	32	28
22	21	22	247	740	222	365	115	134	60	*38	31	28
23	21	21	191	778	200	360	123	131	60	38	33	30
24	24	21	146	578	193	312	113	128	65	37	41	28
25	21	22	120	558	182	273	110	120	67	37	36	28
26	21	22	97	539	172	230	123	110	63	37	44	28
27	21	22	94	*485	166	226	145	103	63	36	55	28
28	21	22	120	558	157	226	128	98	63	36	44	43
29	24	22	207	539	-	204	*126	98	68	36	40	33
30	31	23	291	521	-	218	137	96	67	36	36	100
31	31	-	235	564	-	218	-	87	-	35	36	-
Total	633	794	4,563	16,720	8,192	6,584	4,384	3,371	2,066	1,368	1,104	969
Mean	20.4	26.5	147	539	293	212	146	109	68.9	44.1	35.6	32.3
Cfsm	0.639	0.831	4.61	16.9	9.18	6.65	4.58	3.42	2.16	1.38	1.12	1.01
In.	0.74	0.93	5.32	19.49	9.55	7.68	5.11	3.93	2.41	1.59	1.29	1.13
Ac-ft	1,260	1,570	9,050	33,160	16,250	13,060	8,700	6,690	4,100	2,710	2,190	1,920

Calendar year 1952: Max 1,000 Min 17 Mean 117 Cfsm 3.67 In. 49.82 Ac-ft 84,730
Water year 1952-53: Max 1,110 Min 17 Mean 139 Cfsm 4.36 In. 59.17 Ac-ft 100,700

Peak discharge (base, 900 cfs).--Jan. 9 (2 p.m.) 1,220 cfs (2.66 ft); Jan. 18 (11:30 p.m.) 1,080 cfs (2.50 ft); Jan. 22 (7 to 8 p.m.) 1,100 cfs (2.52 ft).
* Discharge measurement made on this day.

West Branch Grays River near Grays River, Wash.

Location.--Lat 46°23'10", long. 123°33'30", on line between sec. 33, T. 11 N., R. 7 W., and sec. 4, T. 10 N., R. 7 W., on right bank 1 mile upstream from mouth and 3¼ miles northeast of town of Grays River.

Drainage area.--16.3 sq mi.

Records available.--April 1949 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 71 ft (by barometer).

Extremes.--Maximum discharge during year, 2,190 cfs Jan. 22 (gage height, 5.83 ft), from rating curve extended above 370 cfs on basis of slope-area determination at gage height 6.89 ft; minimum, 5.7 cfs Oct. 13-20 (gage height, 1.88 ft).
1949-53: Maximum discharge, 2,970 cfs Feb. 9, 1951 (gage height, 6.45 ft), from rating curve extended above 370 cfs on basis of slope-area determination at gage height 6.89 ft; minimum, 4.2 cfs Sept. 5, 1951 (gage height, 1.78 ft).
Flood of Feb. 22, 1949, reached a stage of 6.89 ft, from floodmarks (discharge, 3,700 cfs, from rating curve extended above 370 cfs on basis of slope-area determination of peak flow).

Remarks.--Records good except those for periods of no gage-height record, which are poor. No diversion or regulation above station. Records of water temperatures for the water year 1953 are given in WSP 1293.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.8	4.0	3.2	226
2.0	11.5	3.5	335
2.2	26	4.0	580
2.4	48	4.5	900
2.6	78	5.1	1,400
2.9	139		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7.4	31	18	204	650	52	88	76	51	32	12	18
2	7.0	21	43	592	*434	48	82	70	49	30	12	17
3	6.6	16.5	195	499	530	45	76	66	46	28	12	16
4	6.6	13.5	361	289	410	43	72	64	43	26	12	15
5	6.6	12	243	200	335	42	68	62	46	25	12.5	14
6	6.3	11	240	160	331	41	66	*61	51	24	12.5	14
7	6.3	10	378	*344	429	40	64	62	68	23	13.5	15
8	6.3	10	323	851	308	39	64	70	67	23	12	16
9	6.3	9.5	312	652	216	38	59	65	58	22	11.5	14
10	6.3	16	316	401	168	40	56	58	49	21	11	13
11	6.0	43	250	724	134	60	58	52	*46	19.5	10.5	12
12	6.0	52	682	569	112	65	66	48	43	19.5	10.5	13
13	6.0	51	316	483	96	60	72	46	43	23	9.5	12
14	5.7	118	197	444	92	55	68	43	40	26	9.5	11
15	*5.7	83	139	592	100	90	62	41	37	*24	9.5	11
16	*5.7	52	108	688	366	350	60	38	34	21	10	11
17	5.7	38	89	634	278	280	58	36	33	19.5	9.5	10
18	5.7	*30	76	748	200	240	54	70	31	18	*9.0	10
19	5.7	26	70	809	170	210	50	123	37	17.5	9.0	10
20	6.3	24	61	547	140	180	48	128	41	16.5	10.5	9
21	7.0	22	80	406	120	150	46	182	38	16.5	9.5	9
22	6.3	20	147	1,200	105	200	45	194	37	16	9.0	*10
23	7.0	19	110	1,400	95	210	50	157	37	15	11.5	11
24	14.5	18	89	664	85	150	47	137	37	15	16.5	10.5
25	10.5	16.5	76	536	75	*130	45	114	38	14.5	15	9.5
26	7.8	16	68	444	66	110	60	96	40	14.5	20	9.5
27	7.0	15	64	392	60	100	120	85	40	14	50	12
28	6.6	14.5	102	658	56	120	110	75	38	13.5	25	59
29	*10	14	229	865	-	90	90	68	37	13.5	23	27
30	54	16	260	550	-	100	84	62	36	12.5	19	321
31	40	-	213	1,000	-	94	-	56	-	12	18	-
Total	294.9	838.5	5,855	18,545	6,161	3,472	1,988	2,505	1,291	615.5	435.0	739.5
Mean	9.51	28.0	189	598	200	112	66.3	80.8	43.0	19.9	14.0	24.6
Cfsm	0.583	1.72	11.6	36.7	13.5	6.87	4.07	4.96	2.64	1.22	0.859	1.51
In.	0.67	1.91	13.36	42.31	14.06	7.92	4.54	5.72	2.95	1.40	0.99	1.69
Ac-ft	585	1,660	11,610	36,780	12,220	6,890	3,940	4,970	2,560	1,220	863	1,470

Calendar year 1952: Max 1,310 Min 5.7 Mean 81.3 Cfsm 4.99 In. 67.88 Ac-ft 59,020
Water year 1952-53: Max 1,400 Min 5.7 Mean 117 Cfsm 7.18 In. 97.52 Ac-ft 84,770

Peak discharge (base, 1,500 cfs).--Jan. 22 (8 p.m.) 2,190 cfs (5.83 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Jan. 5, 6, Jan. 30 to Feb. 1, Feb. 19 to Mar. 24, Mar. 26 to Apr. 6, Apr. 11 to May 5, Aug. 25 to Sept. 21; discharge estimated on basis of recorded range in stage and records for stations on nearby streams.

Youngs River near Astoria, Oreg.

Location.--Lat 46°04'00", long. 123°47'20", in NW¼ sec. 27, T. 7 N., R. 9 W., on left bank 50 ft upstream from crest of Youngs River Falls, 2½ miles southwest of Olney, and 9 miles southeast of Astoria.

Drainage area.--40.1 sq mi.

Records available.--August 1927 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 63.27 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Mar. 12, 1934, at site 1 mile upstream at different datum.

Average discharge.--26 years, 172 cfs.

Extremes.--Maximum discharge during year, 2,770 cfs Jan. 9 (gage height, 10.50 ft); minimum daily, 3.5 cfs Oct. 6.
1927-53: Maximum discharge, 6,300 cfs Nov. 24, 1927 (gage height, 6.52 ft, site and datum then in use), from rating curve extended above 2,000 cfs; minimum, 3.3 cfs Sept. 22, 1951.

Remarks.--Records good except those for periods of no gage-height record or shifting control, which are fair. No diversion or regulation above station.

Revisions.--WSP 1218: Drainage area (present and former site).

Rating tables, water year 1952-53, except period of shifitng control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Dec. 3				Dec. 4 to Sept. 30			
0.5	3.6	3.0	103	0.7	5.7	3.5	150
1.0	9.4	3.5	157	1.0	9.6	4.0	225
1.5	19	4.0	232	1.5	20	5.0	440
2.0	34	4.5	330	2.0	34	7.0	1,150
2.5	62			2.5	56	10.0	2,520
				3.0	95		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*4.4	16	31	388	737	92	186	121	64	48	11	16
2	a4	10	62	730	566	88	158	111	60	45	11	15
3	a4	8.0	252	587	597	82	138	107	55	43	11	*13
4	a4	7.0	706	378	542	80	124	94	51	39	12	11
5	a4	6.2	405	260	497	75	117	83	51	35	13	9.9
6	a3.5	5.9	455	196	452	71	115	75	58	33	12	9.6
7	4.2	5.4	804	440	506	66	110	80	69	30	12	9.6
8	4.2	5.0	557	1,010	402	63	115	114	62	29	12	9.4
9	4.7	4.9	449	2,160	314	60	110	120	56	27	12	9.3
10	4.8	6.2	458	975	256	61	100	107	*58	26	11	8.6
11	4.9	21	345	1,230	216	116	99	95	52	24	9.9	8.1
12	5.0	31	479	910	180	174	119	84	50	24	9.2	8.2
13	5.2	*43	308	737	152	130	118	77	50	23	8.7	8.0
14	5.0	129	210	625	177	116	117	81	44	25	8.4	7.6
15	5.0	90	153	660	262	212	110	78	41	27	8.1	7.3
16	4.9	47	*130	1,200	688	*1,010	101	71	38	23	8.1	7.2
17	4.9	31	111	1,150	584	548	94	63	37	20	8.1	7.2
18	4.9	24	94	1,460	418	500	86	94	36	19	8.2	7.1
19	4.9	19	103	1,610	316	420	80	128	54	19	7.8	7.1
20	5.3	17	90	950	266	390	74	127	75	18	8.0	6.9
21	5.8	15	122	744	218	425	71	154	60	17	8.0	6.8
22	5.7	13	322	1,360	198	503	67	260	54	16	7.6	6.7
23	5.9	12	260	1,510	168	497	92	218	52	*16	7.6	7.6
24	7.3	12	189	804	141	372	81	189	57	15	20	6.9
25	6.7	11	141	821	126	296	71	147	57	14	15	6.8
26	6.0	10	117	748	117	225	78	122	52	14	26	6.6
27	6.0	9.9	119	625	111	224	133	109	55	14	46	6.7
28	5.9	9.7	219	*650	104	260	115	94	57	13	32	32
29	6.8	9.1	485	706	-	210	103	89	58	13	31	25
30	13	11	578	737	-	219	*128	85	56	12	21	215
31	19	-	435	902	-	216	-	72	-	12	17	-
Total	179.9	639.3	9,189	27,263	9,311	7,801	3,210	3,449	1,619	733	432.7	506.2
Mean	5.80	21.3	296	879	333	252	107	111	54.0	23.6	14.0	16.9
Cfsm	0.145	0.531	7.38	21.9	8.30	6.28	2.67	2.77	1.35	0.589	0.349	0.421
In.	0.17	0.59	8.52	25.28	8.63	7.23	2.98	3.20	1.50	0.68	0.40	0.47
Ac-ft	357	1,270	18,230	54,080	18,470	15,470	6,370	6,840	3,210	1,450	858	1,000

Calendar year 1952: Max 1,500 Min 3.5 Mean 129 Cfsm 3.22 In. 43.69 Ac-ft 93,420
Water year 1952-53: Max 2,160 Min 3.5 Mean 176 Cfsm 4.39 In. 59.66 Ac-ft 127,600

Peak discharge (base, 2,100 cfs).--Jan. 9 (2 p.m.) 2,770 cfs (10.50 ft); Jan. 18 (11 to 12 p.m.) 2,530 cfs (10.02 ft); Jan. 22 (11:30 p.m.) 2,620 cfs (10.20 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for North Fork Klaskanine near Olney.
Note.--Shifting-control method used Nov. 11 to Dec. 3.

North Fork Klaskanine River near Olney, Oreg.

Location.--Lat 46°04'10", long. 123°41'50", in NE¼ sec. 29, T. 7 N., R. 8 W., on right bank half a mile downstream from Barth Falls, 2 miles upstream from North Fork of North Fork, and 4 miles southeast of Olney.

Drainage area.--14.0 sq mi.

Records available.--August 1949 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 213.40 ft above mean sea level, datum of 1929.

Extremes.--Maximum discharge during year, 724 cfs Jan. 9 (gage height, 4.98 ft, from recorded range in stage); minimum, 1.5 cfs Oct. 7.
1949-53: Maximum discharge, 806 cfs Jan. 20, 1950 (gage height, 4.59 ft); minimum, that of Oct. 7, 1952.

Remarks.--Records good except those for periods of no gage-height record or backwater from debris, which are fair. Records of water temperatures for water year 1953 are given in WSP 1293.

Rating tables, water year 1952-53, except periods of backwater from debris (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 8				Jan. 9 to Sept. 30			
1.1	1.1	1.6	16	1.2	3.0	1.9	34
1.2	2.3	1.8	31	1.3	4.6	2.2	66
1.3	4.4	2.0	53	1.4	6.8	3.0	215
1.4	7.2	2.5	121	1.5	10	4.0	445
1.5	11	3.5	307	1.7	20	5.0	730

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.2	7.6	15	110	207	39	84	38	25	24	6.1	8.7
2	*1.9	5.5	30	180	181	38	74	38	23	22	6.3	7.4
3	1.8	4.7	55	150	167	37	66	37	22	21	6.6	*6.3
4	1.9	4.2	150	100	153	36	60	32	21	18	6.8	5.6
5	1.8	4.2	100	70	146	33	57	30	22	17	6.8	5.2
6	1.6	4.0	110	55	144	32	57	28	22	15	6.8	5.4
7	1.6	3.8	170	120	151	30	51	30	23	15	7.1	5.6
8	2.0	4.2	140	300	136	28	57	39	21	14	6.8	5.6
9	2.2	4.4	120	*600	*118	26	54	43	22	13	6.6	5.2
10	2.2	5.8	120	349	102	28	51	36	*21	13	6.1	5.0
11	2.2	10	110	354	86	44	51	32	17	12	5.4	4.8
12	2.0	9.6	120	268	72	47	59	30	17	12	5.4	5.0
13	2.0	*14	100	231	62	44	64	29	16	12	5.2	4.8
14	2.0	39	80	205	74	41	64	33	15	12	5.0	4.8
15	1.8	21	60	201	95	68	60	29	14	12	5.0	4.6
16	1.9	13	*51	292	167	*191	57	27	13	10	5.2	4.8
17	2.0	10	41	280	167	155	51	25	13	9.4	5.2	4.8
18	2.0	9.0	36	350	138	157	45	34	14	10	5.2	4.4
19	2.2	8.2	36	450	113	146	41	37	19	10	5.0	4.4
20	2.5	8.2	31	300	98	142	38	35	25	9.0	5.0	4.2
21	3.4	7.9	38	250	82	153	37	46	20	8.4	5.0	4.1
22	2.9	7.2	134	350	79	175	35	60	18	*8.4	4.8	4.2
23	3.4	7.2	118	400	68	169	38	58	19	8.1	5.0	5.8
24	5.0	7.2	86	210	62	146	32	55	22	7.8	11	5.0
25	3.8	7.2	66	220	57	123	31	47	24	7.8	7.8	4.4
26	3.6	7.2	53	210	51	100	36	42	23	7.8	11	4.4
27	3.6	7.2	55	189	47	91	48	38	25	7.1	19	5.2
28	3.6	7	70	*199	43	96	40	35	25	6.8	12	15
29	5.0	7	120	189	-	82	*38	36	26	6.6	10	8.1
30	7.9	8	150	191	-	93	*42	32	26	6.6	7.8	71
31	7.9	-	120	221	-	91	-	28	-	6.3	8.4	-
Total	89.9	263.5	2,685	7,594	3,066	2,683	1,518	1,139	613	362.1	219.4	234.0
Mean	2.90	8.78	86.6	245	110	86.5	50.6	36.7	20.4	11.7	7.08	7.80
Cfsm	0.207	0.627	6.19	17.5	7.86	6.18	3.61	2.62	1.46	0.836	0.506	0.557
In.	0.24	0.70	7.13	20.17	8.14	7.13	4.03	3.03	1.63	0.96	0.58	0.62
Ac-ft	178	523	5,330	15,060	6,080	5,320	3,010	2,260	1,220	718	435	464

Calendar year 1952: Max 347 Min 1.6 Mean 42.1 Cfsm 3.01 In. 40.93 Ac-ft 30,560
Water year 1952-53: Max 600 Min 1.6 Mean 56.1 Cfsm 4.01 In. 54.36 Ac-ft 40,600

Peak discharge (base, 500 cfs).--Jan. 9 (about 12 m.) 724 cfs (4.98 ft).
* Discharge measurement made on this day.
Note.--Backwater from debris Oct. 1 to Nov. 13. No gage-height record Nov. 28 to Dec. 15, Dec. 27 to Jan. 9, Jan. 18-26; discharge estimated on basis of 1 discharge measurement, recorded range in stage, weather records, and records for Youngs River near Astoria.

NEHALEM RIVER BASIN

Nehalem River near Foss, Oreg.

Location.--Lat 45°42'15", long. 123°45'20", in NW¼ sec. 35, T. 3 N., R. 9 W., on right bank a quarter of a mile upstream from Cook Creek and 2.2 miles northeast of Foss.

Drainage area.--667 sq mi.

Records available.--October 1939 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 32.60 ft above mean sea level, datum of 1929 (Oregon State Highway Department benchmark). Prior to Nov. 11, 1939, staff gage at same site and datum.

Average discharge.--14 years, 2,610 cfs.

Extremes.--Maximum discharge during year, 22,800 cfs Jan. 19 (gage height, 14.59 ft); minimum, 56 cfs Oct. 15-17.
1939-53: Maximum discharge, 36,900 cfs Feb. 17, 1949 (gage height, 19.04 ft); minimum, 54 cfs Sept. 22-24, 1951.

Remarks.--Records good. No known diversion or regulation.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
1.2	48	4.0	1,800	1.6	80	6.0	3,950
1.4	91	6.0	3,950	1.9	180	8.0	6,950
1.7	189	8.0	6,950	2.3	385	11.0	13,100
2.0	325	10.0	10,800	3.0	890	14.0	21,000
2.5	625	13.0	18,000	4.0	1,740		
3.0	980						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*62	159	185	4,960	9,940	2,050	3,160	*2,690	1,290	670	188	225
2	62	156	290	6,850	8,520	1,910	2,910	2,400	1,200	634	184	*204
3	62	136	1,190	8,780	8,050	1,780	2,670	2,190	1,110	564	180	184
4	62	126	5,010	7,390	7,840	1,640	2,460	2,000	1,060	515	180	172
5	62	116	3,820	5,600	7,580	1,530	2,280	1,780	1,030	489	*184	164
6	60	111	3,150	4,390	7,320	1,440	2,210	1,610	1,040	450	184	148
7	60	102	4,840	4,740	7,290	1,360	2,140	1,560	1,110	430	184	144
8	58	97	5,370	10,600	6,660	1,270	2,050	1,740	1,110	398	184	140
9	58	91	5,010	*17,200	5,650	1,230	2,040	1,740	*1,030	392	184	137
10	58	97	6,050	15,700	4,810	1,230	2,030	1,670	970	373	184	134
11	58	126	5,080	16,900	4,110	1,370	1,960	1,630	930	361	172	131
12	58	163	5,860	15,800	3,540	1,950	2,100	1,430	890	343	156	131
13	58	*234	4,680	12,900	3,070	1,920	2,200	1,340	850	331	148	128
14	58	430	3,610	9,630	2,800	1,740	2,200	1,270	810	337	140	125
15	56	606	2,740	8,500	2,890	2,000	2,080	1,220	754	337	134	122
16	56	465	*2,250	12,600	4,820	6,500	2,010	1,160	722	331	131	119
17	56	386	1,840	15,500	6,750	*6,270	1,980	1,110	678	314	131	116
18	58	300	1,550	17,400	6,660	5,940	1,900	1,150	655	292	131	113
19	58	257	1,380	20,800	5,880	5,750	1,740	1,430	678	286	131	110
20	60	218	1,220	16,800	5,130	5,480	1,650	1,530	700	276	134	110
21	66	193	1,230	13,900	4,480	5,360	1,560	1,700	670	265	134	107
22	68	178	2,070	14,200	4,030	6,340	1,470	2,150	648	255	131	104
23	70	163	2,960	*16,500	3,660	7,430	1,470	2,280	620	*245	128	107
24	82	159	2,800	12,700	3,290	7,040	1,400	2,310	606	235	137	110
25	84	152	2,270	10,800	2,940	6,200	1,290	2,230	592	230	180	110
26	86	149	1,940	10,800	2,670	5,320	1,340	2,070	585	225	245	110
27	91	145	1,720	10,800	2,430	4,670	1,920	1,890	578	220	286	110
28	91	129	1,720	11,100	2,230	4,280	3,120	1,840	585	220	308	184
29	94	132	2,680	10,500	-	3,790	3,000	1,680	613	216	325	220
30	116	136	4,820	9,520	-	3,530	2,910	1,560	670	204	281	756
31	139	-	5,090	9,610	-	3,410	-	1,430	-	196	250	-
Total	2,167	5,912	94,425	363,470	145,040	111,730	63,250	53,790	24,784	10,634	5,649	4,775
Mean	69.9	197	3,046	11,720	5,180	3,604	2,108	1,735	826	343	182	159
Cfsm	0.105	0.295	4.57	17.6	7.77	5.40	3.16	2.60	1.24	0.514	0.273	0.238
In.	0.12	0.33	5.26	20.27	8.09	6.23	3.53	3.00	1.38	0.59	0.31	0.27
Ac-ft	4,300	11,730	187,300	720,900	287,700	221,600	125,500	106,700	49,160	21,090	11,200	9,470

Calendar year 1952: Max 21,900 Min 56 Mean 1,736 Cfsm 2.60 In. 35.43 Ac-ft 1,260,000
Water year 1952-53: Max 20,800 Min 56 Mean 2,426 Cfsm 3.64 In. 49.38 Ac-ft 1,757,000

Peak discharge (base, 17,000 cfs).--Jan. 11 (4 p.m.) 19,300 cfs (13.44 ft); Jan. 19 (2:30 a.m.) 22,800 cfs (14.59 ft); Jan. 23 (11:30 p.m.) 18,500 cfs (13.17 ft).
* Discharge measurement made on this day.

Wilson River near Tillamook, Oreg.

Location.--Lat 45°29'10", long. 123°43'30", in NW¼ sec. 18, T. 1 S., R. 8 W., on right bank 1 mile upstream from North Fork and 6½ miles east of Tillamook.

Drainage area.--159 sq mi.

Records available.--December 1914 to November 1916 (incomplete), July 1931 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 42.13 ft above mean sea level, datum of 1929. Dec. 18, 1914, to Nov. 4, 1916, staff gage at site three-quarters of a mile downstream at different datum. July 30, 1931, to Sept. 30, 1938, staff gage at site 100 ft downstream at datum 0.93 ft higher.

Average discharge.--22 years (1931-53), 1,211 cfs.

Extremes.--Maximum discharge during year, 13,900 cfs Jan. 19 (gage height, 12.16 ft); minimum, 45 cfs Oct. 15, 16, 17, 18.
1914-16, 1931-53: Maximum discharge, 30,000 cfs Dec. 21, 1933 (gage height, 19.28 ft, site and datum then in use), from rating curve extended above 15,000 cfs; minimum, that of Oct. 15, 16, 17, 18, 1952.

Remarks.--Records good. No diversion or regulation above station.

Revisions.--WSP 1014: Drainage area.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Mar. 22				Mar. 23 to Sept. 30			
0.3	45	3.0	1,180	0.4	78	3.0	1,300
.7	122	4.0	2,000	1.0	235	4.5	2,730
1.3	296	6.0	4,300	1.5	400	6.0	4,600
2.0	590	11.0	11,800	2.0	610		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	122	120	1,930	5,480	722	1,270	1,540	565	283	132	194
2	54	98	262	3,860	3,990	690	1,110	*1,340	534	271	129	*177
3	54	80	642	4,620	4,620	635	1,020	1,160	504	262	129	161
4	54	71	3,420	3,020	4,240	600	938	1,000	480	247	137	147
5	54	67	2,250	2,100	3,960	570	854	889	480	241	137	140
6	52	64	1,510	1,610	3,880	550	847	792	488	232	132	134
7	50	62	2,620	2,240	4,140	526	810	780	512	226	132	132
8	50	60	2,820	5,920	3,400	526	762	924	*529	217	127	127
9	50	59	2,190	7,600	2,550	526	708	882	496	211	122	122
10	50	71	4,000	*5,380	1,980	545	660	804	508	205	117	114
11	48	111	2,950	8,450	1,560	684	655	750	472	199	112	110
12	48	*156	5,140	8,090	1,310	854	738	684	452	191	105	112
13	48	249	3,410	5,450	1,130	783	744	620	424	202	100	110
14	48	516	2,120	4,430	1,060	706	744	592	396	214	98	105
15	45	518	*1,500	4,140	1,080	918	720	556	376	205	98	102
16	47	310	1,180	7,910	2,470	3,050	744	529	358	194	100	102
17	47	227	962	9,190	3,380	2,380	792	496	340	177	102	100
18	47	186	832	10,100	2,580	*1,900	768	610	326	174	102	98
19	48	159	761	11,600	2,010	1,660	756	828	379	169	98	96
20	50	146	673	7,740	1,680	1,570	750	861	393	166	100	93
21	57	134	756	5,880	1,420	2,010	720	1,190	358	164	98	89
22	55	124	1,220	7,300	1,310	3,520	672	1,610	337	158	96	96
23	57	115	1,260	*9,180	1,140	4,380	780	1,550	323	155	102	96
24	67	109	1,040	5,560	1,030	3,460	720	1,380	316	*155	200	93
25	64	104	896	5,030	950	2,600	678	1,190	306	153	214	89
26	60	100	794	4,440	860	2,000	732	1,030	298	150	334	87
27	59	96	728	3,880	810	1,750	1,270	938	302	147	390	89
28	57	92	761	4,970	766	1,770	1,380	816	306	145	312	254
29	66	88	1,330	6,210	-	1,520	1,240	738	302	142	292	191
30	118	92	2,750	5,490	-	1,430	1,590	684	295	140	247	658
31	136	-	2,370	5,730	-	-	-	620	-	134	211	-
Total	1,795	4,386	53,267	179,050	64,786	44,835	26,172	28,383	12,155	5,929	4,805	4,218
Mean	57.9	146	1,718	5,776	2,314	1,446	872	916	405	191	155	141
Cfsm	0.364	0.918	10.8	36.3	14.6	9.09	5.48	5.76	2.55	1.20	0.975	0.887
In.	0.42	1.03	12.46	41.88	15.15	10.49	6.12	6.64	2.84	1.39	1.12	0.99
Ac-ft	3,560	8,700	105,700	355,100	128,500	88,930	51,910	56,300	24,110	11,760	9,530	8,370

Calendar year 1952: Max 11,500 Min 45 Mean 785 Cfsm 4.94 In. 67.16 Ac-ft 569,600
Water year 1952-53: Max 11,600 Min 45 Mean 1,177 Cfsm 7.40 In. 100.53 Ac-ft 852,500

Peak discharge (base, 12,000 cfs).--Jan. 19 (3:30 a.m.) 13,900 cfs (12.16 ft).
* Discharge measurement made on this day.

Trask River near Tillamook, Oreg.

Location.--Lat 45°26'30", long. 123°43'00", in NW¼ sec. 31, T. 1 S., R. 8 W., on right bank half a mile upstream from Gold Creek and 6 miles east of Tillamook.

Drainage area.--143 sq mi.

Records available.--July 1931 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 70 ft (by barometer).

Average discharge.--22 years, 978 cfs.

Extremes.--Maximum discharge during year, 11,400 cfs Jan. 19 (gage height, 9.06 ft); minimum, 42 cfs Oct. 15-18.
1931-53: Maximum discharge, 20,000 cfs Dec. 22, 1933 (gage height, 13.00 ft); minimum, that of Oct. 15-18, 1952.
Maximum stage known, about 17 ft, probably occurred during flood of November 1921 or Mar. 31, 1931 (discharge, 30,000 cfs, from rating curve extended above 12,000 cfs).

Remarks.--Records good. No diversion or regulation above station.

Revisions.--WSP 1044: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Feb. 16 to Mar. 20)

0.3	34	2.0	690
.5	70	3.0	1,480
.7	117	4.0	2,640
1.0	206	6.0	5,710
1.5	410	8.2	9,720

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	*56	102	100	1,510	3,860	763	1,150	*968	542	250	130	162
2	50	74	156	2,610	3,090	732	1,050	885	510	244	128	*144
3	50	62	250	2,910	3,440	696	976	829	488	233	125	136
4	48	56	992	2,120	3,340	666	908	756	455	223	130	128
5	48	54	808	1,590	3,240	636	836	696	455	213	139	122
6	47	54	738	1,250	3,360	618	822	642	466	208	133	120
7	45	52	1,550	1,640	3,340	594	789	642	510	200	130	120
8	45	50	1,710	4,070	2,770	576	738	744	*515	196	125	120
9	47	48	1,310	5,850	2,160	564	684	738	471	193	122	114
10	47	58	2,390	*4,250	1,760	576	648	678	445	187	117	110
11	48	90	1,800	5,710	1,420	678	654	636	410	180	114	107
12	48	*107	2,440	5,400	1,210	808	750	600	405	174	112	107
13	47	200	1,860	3,880	1,060	789	756	564	380	180	107	104
14	45	315	1,250	3,120	1,020	744	756	542	356	193	104	104
15	44	268	*960	2,890	1,060	961	726	515	342	187	102	102
16	42	162	789	6,020	2,190	2,880	750	493	324	174	110	97
17	42	125	660	7,660	3,400	*2,420	750	466	315	162	110	94
18	44	110	576	9,300	2,670	2,030	702	570	303	156	104	94
19	44	97	542	9,680	2,100	1,790	678	660	360	150	102	92
20	47	90	476	6,630	1,760	1,810	648	624	395	150	104	92
21	48	83	548	5,150	1,470	2,330	624	822	351	147	104	90
22	48	79	885	5,540	1,350	3,800	594	984	320	144	100	92
23	48	74	864	6,440	1,180	3,890	642	1,060	307	144	102	92
24	58	72	738	*4,140	1,080	3,000	582	1,070	295	*144	208	92
25	56	74	654	3,660	992	2,340	564	1,000	287	144	209	88
26	48	72	588	3,300	922	1,810	600	908	275	144	272	85
27	47	68	564	3,090	871	1,560	984	822	283	141	370	90
28	47	64	606	3,880	822	1,500	952	738	287	139	264	206
29	52	64	1,080	4,470	-	1,300	900	684	279	139	250	150
30	77	70	1,710	3,960	-	1,330	1,010	648	264	136	200	361
31	100	-	1,620	3,960	-	1,270	-	576	-	133	171	-
Total	1,563	2,894	31,214	135,680	56,937	45,461	23,223	22,560	11,395	5,406	4,598	3,615
Mean	50.4	96.5	1,007	4,377	2,033	1,466	774	728	380	174	148	120
Cfsm	0.352	0.675	7.04	30.6	14.2	10.3	5.11	5.09	2.66	1.22	1.03	0.839
In.	0.41	0.75	8.12	35.29	14.81	11.82	6.04	5.87	2.96	1.41	1.20	0.94
Ac-ft	3,100	5,740	61,910	269,100	112,900	90,170	46,060	44,750	22,600	10,720	9,120	7,170

Calendar year 1952: Max 7,750 Min 42 Mean 618 Cfsm 4.32 In. 58.88 Ac-ft 449,000
Water year 1952-53: Max 9,680 Min 42 Mean 944 Cfsm 6.60 In. 89.62 Ac-ft 683,300

Peak discharge (base, 9,300 cfs).--Jan. 19 (3 a.m.) 11,400 cfs (9.06 ft).
* Discharge measurement made on this day.

Nestucca River below Powder Creek, near Blaine, Oreg.

Location.--Lat 45°15'10", long. 123°39'35", in NW¼ sec. 3, T. 4 S., R. 8 W., near center of span on downstream side of bridge, 50 ft downstream from mouth of Powder Creek and 2.8 miles southeast of Blaine.

Drainage area.--91.2 sq mi.

Records available.--October 1952 to September 1953 (discontinued).

Gage.--Wire-weight gage read twice daily October through March and once daily April through September. Altitude of gage is about 450 ft (from topographic map).

Extremes.--Maximum discharge during year, 7,110 cfs Jan. 19 (gage height, 8.1 ft, from graph based on gage readings), from rating curve extended above 2,500 cfs by logarithmic plotting; minimum, 21 cfs on Oct. 15 (gage height, 0.82 ft)

Remarks.--Records good. Small diversions above station for irrigation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.8	20	2.5	520
1.0	32	3.0	840
1.2	53	5.0	2,660
1.5	113	7.5	6,110
2.0	280		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	41	46	868	1,820	440	634	580	330	132	58	61
2	24	31	87	1,430	1,660	415	598	*532	316	126	53	*56
3	24	28	129	1,620	1,910	400	568	470	302	121	53	56
4	23	26	400	1,320	1,780	380	532	455	280	121	61	53
5	23	28	330	1,010	1,810	356	480	415	280	113	61	42
6	22	26	370	847	1,810	334	470	380	260	113	58	41
7	22	25	770	952	1,860	325	465	370	280	106	58	42
8	22	24	770	2,350	1,530	316	460	395	*272	101	58	43
9	22	24	580	2,870	1,200	298	410	405	256	96	53	42
10	23	37	959	*2,000	1,060	307	405	370	240	89	52	40
11	23	45	875	2,550	868	370	375	348	222	89	49	38
12	23	*48	1,170	2,480	688	410	395	325	226	89	49	39
13	23	108	938	2,000	652	415	465	302	205	85	47	36
14	22	184	700	1,710	646	410	465	290	222	89	47	36
15	21	111	*515	1,530	652	556	430	280	205	89	47	36
16	22	69	420	2,950	1,060	1,710	435	260	198	85	47	36
17	22	47	356	3,960	1,620	1,500	465	248	198	85	46	36
18	22	40	307	5,400	1,440	*1,360	435	280	191	85	46	36
19	22	41	289	5,690	1,200	1,240	420	352	164	85	46	35
20	24	37	252	4,160	1,030	1,200	385	348	188	85	48	35
21	25	33	320	3,030	896	1,380	366	445	180	79	48	34
22	25	36	500	3,370	826	1,910	352	505	170	79	48	38
23	25	34	435	3,030	714	2,080	366	532	170	79	51	37
24	29	32	380	*2,330	640	1,720	366	574	155	*71	89	37
25	26	32	356	1,970	580	1,360	325	562	155	75	77	36
26	24	33	325	1,800	532	1,160	338	532	149	69	135	35
27	24	36	316	1,670	490	959	562	505	140	63	180	36
28	24	32	316	1,830	480	889	500	455	140	61	120	79
29	26	31	568	2,070	-	770	495	415	146	61	110	53
30	34	34	966	1,900	-	777	610	385	140	61	80	101
31	38	-	910	1,920	-	721	-	360	-	58	61	-
Total	754	1,353	15,655	72,617	31,454	26,468	13,572	12,675	6,380	2,740	2,036	1,325
Mean	24.3	45.1	505	2,342	1,123	854	452	409	213	88.4	65.7	44.2
Cfsm	0.266	0.495	5.54	25.7	12.3	9.36	4.96	4.48	2.34	0.969	0.720	0.485
In.	0.31	0.55	6.38	29.61	12.83	10.79	5.53	5.17	2.60	1.12	0.83	0.54
Ac-ft	1,500	2,680	31,050	144,000	62,390	52,500	26,920	25,140	12,650	5,430	4,040	2,630

Calendar year 1952: Max - Min - Mean - Cfsm - In. - Ac-ft -
Water year 1952-53: Max 5,690 Min 21 Mean 512 Cfsm 5.61 In. 76.26 Ac-ft 371,000

Siletz River at Siletz, Oreg.

Location.--lat 44°42'55", long. 123°53'10", in NW¼SW¼ sec. 11, T. 10 S., R. 10 W., on right bank 1½ miles east of Siletz.

Drainage area.--202 sq mi.

Records available.--November 1905 to May 1912, January 1924 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 102.32 ft above mean sea level, datum of 1929. Prior to May 4, 1912, staff gage, Jan. 3 to Nov. 6, 1924, chain gage, Nov. 7, 1924, to Sept. 5, 1930, staff gage, and Sept. 6, 1930, to Sept. 30, 1938, wire-weight gage, all at sites about 2 miles downstream at different datums.

Average discharge.--33 years (1906-11, 1925-53), 1,599 cfs.

Extremes.--Maximum discharge during year, 29,500 cfs Jan. 18 (gage height, 22.26 ft), from rating curve extended above 9,000 cfs on basis of shape of previous curve defined to 15,000 cfs; minimum, 68 cfs Oct. 15-21.

1905-12, 1924-53: Maximum discharge, 37,000 cfs Feb. 17, 1949 (gage height, 25.17 ft), from rating curve extended above 15,000 cfs by logarithmic plotting; minimum observed, 51 cfs Dec. 6, 7, 1929.

Maximum discharge known, 40,800 cfs Nov. 20, 1921 (gage height, 31.6 ft, site and datum then in use), from rating curve extended above 19,000 cfs.

Remarks.--Records good. No diversion above station.

Revisions (water years).--WSP 814: 1935. WSP 754: 1922 (maximum gage height).

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 4 to Jan. 11, Jan. 17)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
2.1	63	5.0	1,240	2.3	84	7.0	3,000
2.4	96	6.0	1,950	2.6	142	10.0	6,300
2.7	162	8.0	3,700	3.0	255	15.0	13,800
3.0	255	12.0	8,400	4.0	690	21.0	26,400
3.5	440	18.0	18,900	5.0	1,300		
4.0	670						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	103	182	2,490	6,880	1,000	1,730	2,040	896	*350	149	202
2	69	85	409	4,330	5,500	956	1,530	1,930	836	334	147	188
3	69	78	630	4,590	8,690	896	1,390	1,730	778	326	147	175
4	69	75	2,050	3,260	6,980	836	1,280	1,490	718	310	172	160
5	69	73	1,890	2,400	6,330	772	1,160	1,300	723	294	*180	154
6	69	72	1,520	1,860	7,740	728	1,140	1,150	884	286	160	149
7	69	72	3,290	2,220	7,420	690	1,110	1,220	950	272	151	149
8	69	71	2,990	4,600	5,900	665	*1,010	1,500	1,120	262	144	147
9	70	70	2,570	7,100	4,290	635	914	1,350	1,050	255	142	142
10	70	76	4,530	5,030	3,280	625	866	1,220	974	244	138	136
11	70	147	*3,580	6,880	2,580	842	842	1,120	878	238	132	132
12	70	202	6,390	7,850	2,100	*1,380	908	1,030	836	234	128	132
13	69	346	3,910	7,110	1,770	1,240	848	950	767	234	124	130
14	69	655	2,370	6,390	1,670	1,110	812	896	706	276	124	*126
15	68	543	1,730	5,420	1,690	1,410	772	830	655	262	126	122
16	68	318	1,350	10,900	3,190	5,640	836	772	625	234	126	118
17	68	238	1,110	17,800	7,020	4,770	1,020	718	575	217	126	114
18	68	196	946	25,800	5,210	3,750	980	1,110	540	208	124	112
19	68	168	898	19,800	3,870	3,290	932	1,590	575	199	120	110
20	68	152	805	14,200	3,080	3,320	884	1,380	570	193	118	108
21	68	139	892	*9,800	2,470	3,940	848	1,680	526	188	118	104
22	69	129	1,280	8,360	2,150	5,710	812	2,270	486	182	114	106
23	71	123	1,160	9,210	1,850	6,060	932	2,520	454	180	114	106
24	89	118	1,010	6,640	1,610	4,720	866	2,240	434	178	136	104
25	82	112	928	6,600	1,430	3,660	789	1,950	418	172	175	100
26	74	109	826	6,880	1,280	2,860	842	1,730	406	170	378	98
27	72	107	810	5,870	1,160	2,440	1,670	1,520	394	165	342	102
28	71	114	815	5,450	1,080	2,330	1,690	1,340	414	165	276	263
29	*76	103	2,430	5,810	-	1,970	1,610	*1,200	394	160	378	185
30	114	103	3,740	6,200	-	2,010	1,970	1,090	366	156	276	732
31	123	-	2,890	6,720	-	1,920	-	986	-	154	227	-
Total	2,288	4,897	59,931	237,570	108,220	72,175	32,973	43,852	19,948	7,098	5,312	4,706
Mean	73.8	163	1,933	7,664	3,865	2,328	1,099	1,415	665	229	171	157
Cfsm	0.365	0.807	9.57	37.9	19.1	11.5	5.44	7.00	3.29	1.13	0.847	0.777
In.	0.42	0.90	11.03	43.74	19.92	13.29	6.07	8.07	3.67	1.31	0.98	0.87
Ac-ft	4,540	9,710	118,900	471,200	214,700	143,200	65,400	86,980	39,570	14,080	10,540	9,330

Calendar year 1952: Max 14,000 Min 68 Mean 1,062 Cfsm 5.26 In. 71.56 Ac-ft 770,900
Water year 1952-53: Max 25,800 Min 68 Mean 1,641 Cfsm 8.12 In. 110.27 Ac-ft 1,188,000

Peak discharge (base, 12,000 cfs).--Jan. 18 (4:30 p.m.) 29,500 cfs (22.26 ft).
* Discharge measurement made on this day.

Alsea River near Tidewater, Oreg.

Location.--Lat 44°23'10", long. 123°49'50", in NW¼NW¼ sec. 6, T. 14 S., R. 9 W., on right bank three-quarters of a mile downstream from Grass Creek, 2.3 miles upstream from Scott Creek, and 3.8 miles southeast of Tidewater.

Drainage area.--334 sq mi.

Records available.--October 1939 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 48.16 ft above mean sea level, datum of 1929.

Average discharge.--14 years, 1,501 cfs.

Extremes.--Maximum discharge during year, 26,100 cfs Jan. 18 (gage height, 20.99 ft); minimum, 60 cfs Oct. 17 (gage height, 1.33 ft).
1939-53: Maximum discharge, 27,800 cfs Jan. 7, 1948 (gage height, 22.43 ft); minimum, 57 cfs Sept. 22, 23, 1951.
Maximum stage known, 29.5 ft on or about Feb. 3, 1890, from floodmark shown by old resident.

Remarks.--Records good. No regulation; a few small diversions above station for irrigation.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.3	55	5.0	1,720
1.7	132	7.0	3,260
2.0	206	9.0	5,400
2.5	370	13.0	11,200
3.0	590	19.0	22,100

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	119	240	2,840	3,860	1,350	1,890	2,100	1,090	*419	178	188
2	72	102	410	5,200	3,530	1,270	1,750	1,910	1,030	394	175	175
3	69	92	780	4,720	5,860	1,210	1,600	1,690	968	378	172	162
4	67	88	1,080	3,520	5,780	1,100	1,480	1,490	918	359	196	150
5	67	85	1,720	2,620	6,250	1,030	1,370	1,340	902	352	*217	141
6	67	83	1,700	2,130	7,910	974	1,320	1,220	962	341	206	137
7	67	81	4,910	3,060	6,600	924	1,270	1,320	968	320	190	141
8	65	81	3,400	6,730	5,800	891	*1,180	1,890	957	309	180	146
9	67	79	2,100	15,700	4,400	860	1,090	1,870	968	302	172	139
10	67	90	3,390	8,560	3,500	891	1,040	1,660	990	291	165	130
11	69	134	2,760	5,820	2,900	1,150	1,030	1,480	902	284	158	128
12	70	185	2,890	6,350	2,430	*1,780	1,070	1,330	840	278	150	128
13	69	298	2,320	8,280	2,140	2,020	1,140	1,230	790	274	144	128
14	69	491	1,670	7,710	2,040	1,690	1,120	1,160	740	295	141	*123
15	64	554	1,300	5,630	2,120	2,180	1,040	1,070	705	288	139	121
16	62	267	1,060	9,080	2,760	6,410	1,090	1,010	671	267	139	119
17	62	190	896	13,300	7,990	5,860	1,380	952	635	255	139	114
18	64	160	805	21,500	7,180	4,640	1,360	1,110	604	243	137	112
19	69	144	770	20,700	4,990	4,550	1,250	1,520	612	234	134	110
20	72	132	705	*18,300	3,860	4,360	1,120	1,330	586	228	132	106
21	74	123	720	14,000	3,120	5,160	1,030	1,480	554	223	132	104
22	72	117	952	9,200	2,670	7,000	974	2,280	532	217	130	110
23	77	110	946	7,370	2,340	6,770	952	2,510	509	212	130	117
24	88	110	850	5,390	2,070	5,210	886	2,210	491	209	134	114
25	92	106	785	5,400	1,850	4,520	835	1,940	468	206	168	108
26	86	104	740	7,370	1,670	3,650	886	1,820	464	206	428	104
27	83	98	790	6,240	1,550	3,020	1,780	*1,670	455	203	386	104
28	83	90	795	5,040	1,450	2,690	1,900	1,520	482	198	264	158
29	*94	102	1,670	4,440	-	2,330	1,750	1,400	473	190	330	175
30	144	110	3,670	4,080	-	2,220	2,040	1,300	455	185	267	231
31	137	-	3,180	3,820	-	2,070	-	1,200	-	180	212	-
Total	2,382	4,525	50,004	244,100	108,620	89,780	38,623	48,012	21,721	8,340	5,845	4,023
Mean	76.8	151	1,613	7,874	3,879	2,896	1,287	1,549	724	269	189	134
Cfsm	0.230	0.452	4.83	23.6	11.6	8.67	3.85	4.64	2.17	0.805	0.566	0.401
In.	0.27	0.50	5.57	27.18	12.09	10.00	4.30	5.35	2.42	0.93	0.65	0.45
Ac-ft	4,720	8,980	99,180	484,200	215,400	178,100	76,610	95,230	43,080	16,540	11,590	7,980

Calendar year 1952: Max 13,500 Min 62 Mean 1,240 Cfsm 3.71 In. 50.55 Ac-ft 900,100
Water year 1952-53: Max 21,500 Min 62 Mean 1,715 Cfsm 5.13 In. 69.71 Ac-ft 1,242,000

Peak discharge (base, 13,000 cfs).--Jan. 9 (6:30 a.m.) 18,200 cfs (17.01 ft); Jan. 18 (10 p.m.) 26,100 cfs (20.99 ft).
* Discharge measurement made on this day.

Lake Creek at Triangle Lake, Oreg.

Location.--Lat 44°09'40", long. 123°34'10", in SW¼ sec. 20, T. 16 S., R. 7 W., on right bank 500 ft downstream from outlet of Triangle Lake.

Drainage area.--50 sq mi, approximately.

Records available.--August 1931 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 672.75 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--22 years, 208 cfs.

Extremes.--Maximum discharge during year, 3,640 cfs Jan. 19 (gage height, 7.94 ft); minimum, 4.2 cfs Oct. 18-20 (gage height, 0.43 ft).
1931-53: Maximum discharge, 4,180 cfs Feb. 18, 1949, from rating curve extended above 2,400 cfs by logarithmic plotting; maximum gage height, 8.68 ft Feb. 18, 1949 (backwater from debris); minimum discharge, 2.7 cfs Aug. 1, 1944; minimum daily, 4.2 cfs Oct. 18, 19, 1952.

Remarks.--Records good. No diversion above station.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 10 to Feb. 22, Mar. 16-29, Apr. 22 to July 2)

0.4	3.5	2.0	185
.6	9.1	2.5	316
.8	18	3.0	485
1.0	32	4.0	950
1.2	52	6.0	2,210
1.5	91	7.5	3,420

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.9	8.1	16	299	a500	207	279	302	157	69	29	41
2	6.9	8.5	21	356	a500	195	250	284	147	64	28	39
3	6.5	8.5	34	426	637	185	229	263	139	63	28	36
4	6.5	8.5	58	392	820	174	214	255	128	58	29	*34
5	6.2	8.5	99	328	820	161	199	207	126	57	31	30
6	5.9	8.8	163	268	810	151	181	185	135	54	32	29
7	5.7	8.8	265	250	825	143	*178	187	137	53	32	32
8	5.7	8.8	372	*313	770	137	167	216	132	52	30	43
9	5.4	8.8	365	760	660	130	159	237	132	51	30	37
10	5.2	9.9	337	*985	a500	134	149	224	124	49	29	34
11	4.9	11	352	810	a450	157	143	204	116	46	28	30
12	4.9	12	337	664	a380	204	153	*183	114	46	28	30
13	4.7	15	307	740	a320	239	192	163	107	43	26	30
14	4.7	21	260	845	a280	229	216	155	102	43	24	28
15	4.9	32	207	795	a280	257	204	147	96	42	23	26
16	*4.5	37	170	850	a340	437	192	137	91	40	22	24
17	4.7	35	139	1,260	578	673	212	130	87	39	21	22
18	4.2	29	121	2,170	940	646	216	139	*85	38	21	21
19	4.2	25	110	3,410	800	570	212	178	83	38	21	21
20	4.5	*21	101	2,690	*678	553	192	202	81	36	21	21
21	4.5	20	97	2,230	517	678	181	222	80	36	21	20
22	4.5	20	102	1,440	437	935	178	274	77	34	21	20
23	4.7	18	107	950	378	1,010	187	331	74	33	21	20
24	5.2	17	107	715	328	925	183	296	74	32	22	20
25	5.2	15	102	a600	290	795	167	284	70	32	25	20
26	5.7	14	97	a650	265	660	183	260	68	31	36	18
27	5.9	13	96	705	242	533	212	250	67	*31	50	18
28	6.2	13	94	a650	224	456	271	222	69	31	52	21
29	7.2	13	110	a600	-	381	279	204	70	30	50	22
30	6.9	15	207	a550	-	337	290	183	72	30	48	26
31	7.5	-	299	a520	-	310	-	170	-	29	44	-
Total	170.6	483.2	5,252	28,221	14,569	12,602	6,068	6,694	3,040	1,330	923	813
Mean	5.50	16.1	169	910	520	407	202	216	101	42.9	29.8	27.1
Cfsm	0.110	0.322	3.38	18.2	10.4	8.14	4.04	4.32	2.02	0.858	0.596	0.542
In.	0.13	0.36	3.91	20.99	10.84	9.37	4.51	4.98	2.26	0.99	0.69	0.60
Ac-ft	338	958	10,420	55,980	28,900	25,000	12,040	13,280	6,030	2,640	1,830	1,610

Calendar year 1952: Max 2,120 Min 4.2 Mean 160 Cfsm 3.20 In. 43.69 Ac-ft 116,500
Water year 1952-53: Max 3,410 Min 4.2 Mean 220 Cfsm 4.40 In. 59.63 Ac-ft 159,000

Peak discharge (base, 1,200 cfs).--Jan. 19 (7 a.m.) 3,640 cfs (7.94 ft).
* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for Alsea River near Tidewater.

South Umpqua River at Tiller, Oreg.

Location.--Lat 42°55'50", long. 122°56'50", in NE¼ sec. 33, T. 30 S., R. 2 W., on right bank 0.3 mile upstream from Elk Creek, 0.4 mile downstream from Salt Creek, and 0.4 mile east of Tiller.

Drainage area.--454 sq mi.

Records available.--November 1910 to November 1911, October 1939 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 991.8 ft above mean sea level, datum of 1929 (from river-profile survey). Nov. 9, 1910, to Nov. 30, 1911, staff gage at site 0.2 mile downstream at different datum. Oct. 1 to Nov. 26, 1939, staff gage at present site and datum.

Average discharge.--14 years, 1,019 cfs.

Extremes.--Maximum discharge during year, 31,600 cfs Jan. 18 (gage height, 20.2 ft, referred to outside gage), from rating curve extended above 12,000 cfs on basis of slope-area determination at gage height 22.35 ft; minimum, 39 cfs Oct. 16, 17.
1910-11, 1939-53: Maximum discharge, 37,400 cfs Oct. 29, 1950 (gage height, 22.35 ft, referred to outside gage), from rating curve extended above 12,000 cfs on basis of slope-area determination of peak flow; minimum observed, 20 cfs Sept. 3, 4, 1911.

Remarks.--Records good except those for periods of ice effect, no gage-height record, or shifting control, which are fair. Small diversions above station for irrigation. No regulation.

Rating tables, water year 1952-53, except periods of ice effect or shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
0.9	27	3.0	750	0.9	50	7.0	4,290
1.2	74	4.0	1,400	1.4	160	10.0	8,380
1.6	163	7.0	4,200	2.0	350	15.0	18,400
2.0	285	10.0	8,380	3.0	820	18.2	26,300
2.5	485	11.8	11,600	4.0	1,460		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	45	82	612	2,600	1,260	1,260	1,310	1,650	520	142	110
2	46	45	153	995	3,890	1,090	1,140	1,400	1,420	502	137	106
3	48	45	176	982	11,400	972	1,120	1,240	1,270	511	139	99
4	45	43	153	798	7,030	870	1,120	1,180	1,120	498	137	95
5	46	43	336	722	10,700	814	1,160	1,260	1,090	480	134	90
6	45	43	292	646	11,600	787	1,130	1,320	2,300	470	134	97
7	43	42	1,560	1,160	10,400	804	1,030	1,260	5,980	466	132	101
8	42	42	988	2,920	5,820	936	914	1,120	5,830	439	124	86
9	40	42	555	5,900	3,930	1,010	809	1,110	3,800	398	122	86
10	42	42	3,920	a3,600	2,920	1,010	735	1,030	2,900	366	117	82
11	43	45	*2,070	a2,400	2,250	942	685	942	2,310	343	112	76
12	45	78	1,860	a2,600	1,840	942	630	880	2,000	329	110	76
13	43	131	1,470	5,090	1,540	892	600	853	1,860	*304	108	74
14	43	174	1,100	4,120	1,370	831	560	942	1,610	294	112	72
15	43	146	840	2,760	1,250	782	534	924	1,450	273	132	70
16	40	99	656	3,920	1,210	787	560	858	1,330	257	115	68
17	39	82	505	11,500	2,730	842	725	831	1,260	247	108	*68
18	42	74	400	26,100	3,240	886	875	948	1,200	238	101	68
19	48	70	344	11,000	2,290	1,240	858	2,570	1,070	228	97	66
20	51	74	340	9,350	1,810	1,560	996	2,980	948	219	97	66
21	48	74	352	5,960	1,520	1,510	1,180	*2,880	870	210	92	64
22	46	69	585	3,830	1,400	2,650	1,310	2,620	814	204	90	64
23	45	65	607	*2,760	1,270	*3,040	1,310	2,520	776	196	90	64
24	45	54	458	2,160	1,160	4,070	1,140	2,790	725	190	95	66
25	48	b55	368	1,830	1,060	4,030	1,090	2,310	680	184	99	64
26	48	b55	328	1,640	1,050	2,810	1,160	3,370	650	176	187	61
27	45	b60	380	1,400	1,250	2,180	1,460	3,440	620	168	187	59
28	43	b60	340	1,330	1,360	1,940	1,600	2,910	600	163	137	63
29	43	b65	332	1,840	-	1,670	1,350	2,320	595	157	150	74
30	*45	70	786	2,250	-	1,470	1,270	1,990	556	150	144	76
31	45	-	756	2,360	-	1,410	-	1,720	-	147	120	-
Total	1,383	2,032	23,092	124,535	99,890	46,037	30,311	53,898	49,284	9,327	3,801	2,311
Mean	44.6	67.7	745	4,017	3,568	1,485	1,010	1,739	1,643	301	123	77.0
Cfsm	0.098	0.149	1.64	8.85	7.86	3.27	2.22	3.83	3.62	0.663	0.271	0.170
In.	0.11	0.17	1.89	10.20	8.18	3.77	2.48	4.42	4.04	0.76	0.31	0.19
Ac-ft	2,740	4,030	45,800	247,000	198,100	91,310	60,120	106,900	97,750	18,500	7,540	4,580

Calendar year 1952: Max 10,700 Min 39 Mean 992 Cfsm 2.19 In. 29.74 Ac-ft 720,100
Water year 1952-53: Max 26,100 Min 39 Mean 1,222 Cfsm 2.69 In. 36.52 Ac-ft 884,400

Peak discharge (base, 7,000 cfs).--Dec. 10 (11 a.m.) 7,860 cfs (9.68 ft); Jan. 9 (8 a.m.) 7,830 cfs (9.66 ft); Jan. 18 (4:30 p.m.) 31,600 cfs (20.2 ft); Feb. 3 (2 to 3 p.m.) 13,800 cfs (12.90 ft); Feb. 5 (12 p.m.) 16,900 cfs (14.35 ft); June 7 (11:30 p.m.) 7,560 cfs (9.49 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for station near Brockway.

b Stage-discharge relation affected by ice.

Note.--Shifting-control method used Dec. 11 to Jan. 16.

Cow Creek near Azalea, Oreg.

Location.--Lat 42°49'30", long. 123°10'40", in sec. 4, T. 32 S., R. 4 W., on right bank 4 miles northeast of Azalea.

Drainage area.--76 sq mi, approximately.

Records available.--April 1926 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 1,685 ft (by barometer). Prior to July 19, 1949, staff gage at same site and datum.

Average discharge.--23 years (1929-31, 1932-53), 101 cfs.

Extremes.--Maximum discharge during year, 4,260 cfs Jan. 18 (gage height, 10.91 ft), from rating curve extended above 2,000 cfs on basis of slope-area determination at gage height 14.37 ft; minimum, 10 cfs Oct. 7, 17, 18.
1926-53: Maximum discharge, 5,920 cfs Oct. 29, 1950 (gage height, 14.37 ft), from rating curve extended above 2,000 cfs on basis of slope-area determination of peak flow; minimum observed, 4 cfs Sept. 9-19, 1929, Aug. 26-28, 1931, Aug. 21 to Sept. 6, 1934.

Remarks.--Records good. Diversions for irrigation of about 400 acres above station.

Revisions (water years).--WSP 984: 1933-36. WSP 1154: 1946(M), 1948(M).

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
1.6	6	3.0	305	1.3	11	2.5	205
1.7	15	4.0	624	1.4	16	3.0	335
1.8	18	6.0	1,550	1.5	24	4.0	660
2.0	60	8.0	2,740	1.7	44	5.0	1,060
2.5	163			2.0	92	6.2	1,660

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	14	57	111	225	164	155	119	215	56	26	19
2	12	14	67	105	212	148	146	114	171	54	28	18
3	12	14	52	105	484	146	136	98	148	52	24	18
4	12	15	100	97	464	141	130	90	132	49	25	17
5	11	15	222	91	506	134	127	86	127	47	25	16
6	11	14	130	88	470	127	125	84	181	47	25	18
7	11	14	770	364	461	123	116	82	300	42	24	18
8	11	15	256	1,010	544	121	112	78	292	40	24	17
9	11	16	117	1,700	407	121	104	78	242	38	22	16
10	11	16	1,050	544	332	125	98	72	203	38	22	16
11	11	19	*339	382	280	123	92	68	171	36	22	15
12	11	25	227	782	242	132	88	64	155	36	21	15
13	11	45	168	944	218	125	82	62	146	36	19	15
14	12	55	130	557	210	116	78	*69	130	36	19	14
15	11	36	109	367	200	114	74	64	119	*35	19	14
16	11	25	91	490	188	134	76	64	108	33	20	14
17	10	23	80	886	341	136	88	63	100	32	19	*14
18	10	22	71	2,730	407	150	88	64	92	31	18	14
19	12	22	64	1,350	290	230	88	*116	88	31	18	14
20	12	22	64	1,640	250	235	92	114	82	30	18	14
21	12	22	58	870	222	215	94	183	76	29	18	14
22	11	22	62	555	210	235	92	157	72	29	18	14
23	11	20	58	*416	200	*240	88	235	72	29	17	14
24	12	19	53	338	193	314	82	268	69	29	20	14
25	12	20	52	305	179	337	76	200	66	28	19	14
26	12	20	58	280	171	290	78	383	64	28	35	14
27	*12	22	105	240	164	248	121	374	63	28	30	14
28	12	22	82	220	169	225	143	290	62	26	24	15
29	12	24	78	218	-	203	116	242	63	25	24	19
30	13	25	219	225	-	183	116	203	60	25	22	18
31	14	-	146	218	-	171	-	191	-	25	*21	-
Total	359	657	5,135	18,228	8,239	5,546	3,101	4,375	3,869	1,100	686	466
Mean	11.6	21.9	166	588	294	179	103	141	129	35.5	22.1	15.5
Cfsm	0.153	0.288	2.18	7.74	3.87	2.36	1.36	1.86	1.70	0.467	0.291	0.204
In.	0.18	0.32	2.51	8.92	4.03	2.71	1.52	2.14	1.89	0.54	0.34	0.23
Ac-ft	712	1,300	10,190	36,150	16,340	11,000	6,150	8,680	7,670	2,180	1,360	924

Calendar year 1952: Max 1,750 Min 10 Mean 133 Cfsm 1.75 In. 23.86 Ac-ft 96,740
Water year 1952-53: Max 2,730 Min 10 Mean 142 Cfsm 1.87 In. 25.33 Ac-ft 102,700

Peak discharge (base, 800 cfs).--Dec. 7 (4 a.m.) 962 cfs (4.83 ft); Dec. 10 (10 a.m.) 2,810 cfs (6.12 ft); Jan. 9 (7 a.m.) 2,540 cfs (7.67 ft); Jan. 12 (10 p.m.) 1,180 cfs (5.27 ft); Jan. 18 (6 p.m.) 4,260 cfs (10.91 ft); Feb. 3 (5 p.m.) 802 cfs (4.38 ft).
* Discharge measurement made on this day.

South Umpqua River near Brockway, Oreg.

Location.--Lat 43°08'00", long. 123°23'50", in SW¼ sec. 15, T. 28 S., R. 6 W., on downstream side of right pier of Winston Bridge on U. S. Highway 99, 2½ miles northeast of Brockway and 4 miles downstream from Lookingglass Creek.

Drainage area.--1,640 sq mi, approximately.

Records available.--December 1905 to June 1912, October 1923 to September 1926, January 1942 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 461.84 ft above mean sea level, datum of 1929 (Oregon State Highway benchmark). Prior to June 23, 1949, staff, chain, and wire-weight gages at several sites within 400 ft of present site at various datums.

Average discharge.--19 years (1906-11, 1923-26, 1942-53), 2,719 cfs.

Extremes.--Maximum discharge during year, 89,200 cfs Jan. 18 (gage height, 30.36 ft); minimum, 96 cfs Oct. 6.

1905-12, 1923-26, 1942-53: Maximum discharge, 102,000 cfs Oct. 29, 1950 (gage height, 32.4 ft), from rating curve extended above 76,000 cfs on basis of slope-conveyance study; minimum observed, 36 cfs Aug. 12, 13, 1946.

Flood of Feb. 21, 1927, reached a stage of about 31.2 ft, present site and datum. Flood in February 1890 reached a stage 1.9 ft higher, according to local resident, who lived nearby at time of both floods.

Remarks.--Records good except those for period of no gage-height record, which are fair. Many small diversions above station for irrigation. No regulation.

Revisions (water years).--WSP 1248: 1946(M), 1948(M), 1951.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

3.1	95	7.0	2,800
3.5	170	9.0	6,400
4.0	325	13.0	17,600
5.0	800	20.0	41,700
6.0	1,600	26.3	68,000

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	106	131	199	3,600	5,840	3,350	3,410	2,950	4,200	1,100	286	276
2	104	133	576	3,110	6,240	3,070	*3,110	2,910	3,720	1,020	279	244
3	104	131	1,120	3,110	21,100	2,760	2,910	2,700	3,210	982	272	*228
4	101	131	982	2,670	21,600	2,490	2,790	2,410	2,840	961	276	216
5	100	131	3,670	2,340	18,600	2,300	2,700	2,320	2,600	926	289	205
6	100	129	3,000	2,150	26,100	2,200	2,670	2,340	3,220	863	289	205
7	100	131	10,800	4,040	16,600	2,100	2,530	2,330	7,650	821	286	216
8	a100	133	12,200	12,700	16,100	2,120	2,380	2,250	11,500	788	276	219
9	a100	133	5,720	29,500	11,600	2,220	2,140	2,200	7,980	734	263	205
10	a110	135	15,200	15,700	8,680	2,310	1,980	2,160	6,280	670	250	196
11	a110	135	13,900	8,800	6,640	2,320	1,820	1,980	5,060	640	240	191
12	a110	143	7,320	9,400	5,440	2,450	1,710	1,820	4,220	600	228	180
13	a120	186	*5,320	19,800	4,580	2,630	1,610	1,700	3,970	*576	219	170
14	a120	321	3,830	18,500	4,020	2,460	1,540	1,720	3,520	558	213	168
15	a120	472	3,000	11,200	3,840	2,320	1,440	1,820	3,110	526	213	163
16	a110	437	2,380	10,200	3,570	2,280	1,390	1,750	2,830	504	219	154
17	a110	318	1,960	24,600	5,280	3,110	1,520	1,650	2,590	481	222	161
18	a120	250	1,650	67,900	15,300	3,190	1,910	1,590	2,380	450	193	147
19	a130	216	1,420	52,100	10,400	5,520	1,920	2,360	2,250	429	186	143
20	a130	196	1,270	*35,100	7,750	7,780	1,940	*4,820	2,020	409	178	145
21	a140	191	1,240	27,000	6,120	8,050	2,070	5,220	1,820	405	175	145
22	a140	188	1,450	15,200	5,180	8,620	2,220	6,000	1,700	389	183	147
23	a130	186	1,820	10,200	4,660	9,620	2,330	5,680	1,600	373	183	149
24	a130	178	1,610	7,580	4,110	9,800	2,160	6,900	1,480	361	186	147
25	a130	170	1,360	6,280	3,680	11,400	1,950	5,940	1,390	357	188	147
26	a140	163	1,260	6,680	3,320	8,700	1,950	9,600	1,320	353	222	147
27	135	158	1,730	*6,440	3,270	6,620	2,270	13,500	1,260	341	345	143
28	*135	156	2,390	5,520	3,410	5,580	3,300	9,520	1,210	329	405	149
29	135	158	2,030	5,260	-	4,860	3,020	7,000	1,220	318	333	168
30	133	156	3,890	5,580	-	4,130	2,970	5,540	1,210	307	321	193
31	131	-	5,000	5,820	-	3,800	-	4,480	-	296	321	-
Total	3,684	5,696	119,297	438,080	253,030	140,160	67,660	125,160	99,360	17,867	7,739	5,367
Mean	119	190	3,848	14,130	9,037	4,521	2,255	4,037	3,312	576	250	179
Cfsm	0.073	0.116	2.35	8.62	5.51	2.76	1.38	2.46	2.02	0.351	0.152	0.109
In.	0.08	0.13	2.71	9.93	5.74	3.18	1.53	2.84	2.25	0.41	0.18	0.12
Ac-ft	7,310	11,300	236,600	868,900	501,900	278,000	134,200	248,300	197,100	35,440	15,350	10,650

Calendar year 1952: Max 33,900 Min 100 Mean 2,873 Cfsm 1.75 In. 23.87 Ac-ft 2,086,000
Water year 1952-53: Max 67,900 Min 100 Mean 3,515 Cfsm 2.14 In. 29.10 Ac-ft 2,545,000

Peak discharge (base, 15,000 cfs).--Dec. 8 (2 a.m.) 17,000 cfs (12.85 ft); Dec. 10 (7:30 p.m.) 30,000 cfs (16.66 ft); Jan. 9 (1:30 p.m.) 34,400 cfs (17.94 ft); Jan. 14 (12:30 a.m.) 22,400 cfs (14.43 ft); Jan. 18 (10:30 p.m.) 89,200 cfs (30.36 ft); Feb. 3 (9:30 p.m.) 30,300 cfs (16.72 ft); Feb. 6 (7 a.m.) 30,200 cfs (16.71 ft); Feb. 18 (6 a.m.) 17,700 cfs (13.03 ft); May 26 (10 p.m.) 16,700 cfs (12.74 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for station at Tiller.

Lake Creek at Diamond Lake, near Fort Klamath, Oreg.

Location.--Lat 43°11'10", long. 122°09'50", in SW¼ sec. 30, T. 27 S., R. 6 E., on right bank 260 ft downstream from outlet of Diamond Lake and 35 miles north of Fort Klamath.

Drainage area.--57 sq mi, approximately.

Records available.--May 1922 to September 1925 (incomplete), October 1926 to September 1953 (discontinued).

Gage.--Water-stage recorder. Altitude of gage is 5,180 ft (from river-profile map). Prior to May 26, 1931, staff gage at site 300 ft downstream at different datum. May 26, 1931, to Oct. 6, 1933, staff gage at present site and datum.

Average discharge.--26 years (1926-29, 1930-53), 54.3 cfs.

Extremes.--Maximum discharge during year, 290 cfs Dec. 14 (gage height, 2.02 ft), from rating curve extended above 170 cfs by logarithmic plotting; minimum, 5.3 cfs Nov. 17; minimum daily, 7.2 cfs Nov. 17.
1922-25, 1926-53: Maximum discharge observed, 336 cfs Jan. 1, 1943 (gage height, 2.8 ft), from rating curve extended above 120 cfs; no flow Aug. 25-27, 1931.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Flow regulated by gates and fish racks at lake outlet, and at times affected by collection of moss on racks. No diversion above station.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.6	5.7	1.5	111
.7	9.4	1.8	200
.9	21	1.9	240
1.2	54		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	37	18	131	131	a120	87	9.0	116	118	60	67
2	38	37	21	131	136	a120	85	9.9	116	118	62	67
3	38	37	26	131	156	a110	85	10	116	118	62	65
4	38	37	26	128	*156	a110	83	11	114	109	62	64
5	38	37	42	124	162	a110	81	12	126	104	62	62
6	38	38	80	*116	165	a110	83	13	*136	104	60	59
7	38	38	150	118	159	a110	83	16	150	104	60	59
8	41	38	212	126	162	a110	83	a20	172	104	60	59
9	39	39	165	134	159	a110	83	a30	176	100	60	59
10	34	49	176	131	a150	a110	81	a50	168	98	59	59
11	33	48	165	128	a150	a100	81	a110	165	98	59	59
12	31	45	150	128	a150	a100	81	107	168	91	59	57
13	30	48	126	131	a140	a100	81	111	182	85	59	57
14	31	50	201	131	a140	a100	81	109	179	83	59	59
15	31	50	232	128	a140	a100	81	107	176	81	59	57
16	31	33	216	131	a140	a100	80	107	176	80	57	57
17	32	7.2	200	139	a140	a100	81	107	168	68	57	59
18	32	8.7	186	165	a130	a100	81	107	168	64	57	59
19	33	9.0	179	179	a130	a95	80	109	168	62	57	57
20	33	9.4	172	182	a130	a95	80	111	165	*62	56	57
21	34	9.9	165	179	a130	a95	80	111	162	62	56	57
22	34	9.4	159	168	a130	a95	80	109	159	60	56	56
23	34	*9.4	153	162	a130	a95	78	109	153	60	54	*56
24	34	9.4	148	156	a120	a95	78	116	150	60	54	54
25	36	10	142	153	a120	a95	78	124	136	60	54	54
26	36	11	139	153	a120	a95	78	126	124	60	62	54
27	36	12	139	150	a120	*93	80	126	124	60	64	54
28	36	13	134	148	a120	91	43	126	124	60	64	54
29	37	13	134	145	-	89	8.7	124	121	60	67	54
30	37	13	136	139	-	89	8.7	124	121	60	68	56
31	37	-	131	134	-	87	-	121	-	60	67	- -
Total	1,089	805.4	4,323	4,399	3,916	3,129	2,253.4	2,581.9	4,479	2,513	1,852	1,747
Mean	35.1	26.8	139	142	140	101	75.1	83.3	149	81.1	59.7	58.2
Cfsm	0.616	0.470	2.44	2.49	2.46	1.77	1.32	1.46	2.61	1.42	1.05	1.02
In.	0.71	0.53	2.82	2.87	2.56	2.04	1.47	1.68	2.92	1.64	1.21	1.14
Ac-ft	2,160	1,600	8,570	8,730	7,770	6,210	4,470	5,120	8,880	4,980	3,670	3,470

Calendar year 1952: Max 232 Min 7.2 Mean 78.2 Cfsm 1.37 In. 18.68 Ac-ft 56,750
Water year 1952-53: Max 232 Min 7.2 Mean 90.7 Cfsm 1.59 In. 21.59 Ac-ft 65,630

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage and records for North Umpqua River below Lake Creek, near Toketee Falls.

North Umpqua River below Lake Creek, near Toketee Falls, Oreg.
(Formerly published as North Umpqua River below Lake Creek)

Location.--Lat 43°19', long. 122°11', in NW¼ sec. 13, T. 26 S., R. 5 E., on right bank 600 ft downstream from Lake Creek and 14 miles east of Toketee Falls.

Drainage area.--175 sq mi.

Records available.--October 1927 to September 1953. Prior to October 1952, published as North Umpqua River below Lake Creek.

Gage.--Water-stage recorder. Altitude of gage is 4,090 ft (from river-profile map).

Average discharge.--25 years (1927-45, 1946-53), 394 cfs.

Extremes.--Maximum discharge during year, about 1,050 cfs June 7 during period of no gage-height record; minimum, 351 cfs Nov. 28.
1927-53: Maximum discharge, 1,190 cfs June 9, 1933 (gage height, 2.34 ft); from rating curve extended above 700 cfs; minimum, 206 cfs Dec. 9, 1931.

Remarks.--Records fair except those for May 20 to Aug. 9, which are poor. Flow slightly regulated by Diamond Lake.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 16 to July 15, Aug. 10 to Sept. 30)

1.0	351
1.5	565
2.0	895
2.2	1,080

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	414	398	370	474	510	474	446	497	a750	g690	a520	479
2	414	398	374	484	535	470	446	488	a750	g690	a520	474
3	414	398	378	470	626	470	450	492	a700	a700	a520	470
4	414	398	382	466	*595	466	450	502	a700	a680	a520	470
5	410	398	378	462	605	462	450	525	a800	a680	g520	470
6	410	398	382	458	654	458	450	555	a950	g676	g520	470
7	410	398	378	462	620	458	450	580	a1,000	a680	a520	466
8	414	398	390	484	610	454	446	575	a950	a660	a520	462
9	410	398	406	535	595	454	446	570	a900	g654	a520	462
10	406	406	426	492	580	454	446	580	a900	a640	520	462
11	406	414	470	484	565	454	446	615	a900	a640	520	462
12	406	410	484	502	555	454	442	615	a850	a620	520	462
13	402	414	479	506	545	454	442	620	a850	a620	520	462
14	402	414	488	488	540	450	442	642	a800	a600	515	458
15	402	414	565	484	530	446	442	670	a800	g605	515	458
16	402	410	555	488	525	450	446	683	*g810	a600	506	454
17	402	382	540	545	525	450	450	690	a820	a580	502	454
18	402	382	525	702	530	450	446	772	g795	g575	502	454
19	402	382	515	626	515	450	454	922	g788	a580	502	454
20	402	382	510	600	515	454	462	a900	a780	g570	488	450
21	402	382	506	575	510	454	479	a850	a780	a560	474	450
22	402	378	497	555	502	458	497	a800	g772	*g550	479	450
23	402	*374	484	540	497	458	510	a750	g765	a550	484	450
24	402	370	474	525	492	458	520	a750	g765	g550	484	450
25	402	370	502	520	488	454	540	a700	g750	a550	497	*450
26	402	370	484	515	488	454	555	a700	g735	a540	555	446
27	402	370	479	510	484	*454	590	a750	a720	a540	510	442
28	402	367	474	510	479	450	555	a700	a720	a540	495	446
29	402	367	474	506	-	450	515	a750	g716	a540	497	446
30	402	370	474	506	-	450	506	a750	g702	a520	488	454
31	402	-	470	502	-	450	-	a700	-	a520	479	-
Total	12,566	11,710	14,313	15,976	15,215	14,122	14,219	20,693	24,018	18,700	15,732	13,737
Mean	405	390	462	515	543	456	474	668	801	603	507	458
Cfsm	2.31	2.23	2.64	2.94	3.10	2.61	2.71	3.82	4.58	3.45	2.90	2.62
In.	2.67	2.49	3.04	3.40	3.23	3.00	3.02	4.40	5.10	3.97	3.34	2.92
Ac-ft	24,920	23,230	28,390	31,690	30,180	28,010	28,200	41,040	47,640	37,090	31,200	27,250

Calendar year 1952: Max 1,040 Min 367 Mean 509 Cfsm 2.91 In. 39.62 Ac-ft 369,700
Water year 1952-53: Max 1,000 Min 367 Mean 523 Cfsm 2.99 In. 40.58 Ac-ft 378,800

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of records for station above Clearwater River near Toketee Falls.
g Computed on basis of staff-gage reading.

North Umpqua River above Clearwater River, near Toketee Falls, Oreg.
(Formerly published as North Umpqua River above Clearwater River)

Location.--Lat 43°17', long. 122°24', in NE¼ sec. 25, T. 26 S., R. 3 E., on right bank 2 miles upstream from Clearwater River and 2¾ miles east of Toketee Falls.

Drainage area.--258 sq mi.

Records available.--September 1948 to September 1953. Prior to October 1952, published as North Umpqua River above Clearwater River.

Gage.--Water-stage recorder. Datum of gage is 2,457.51 ft above mean sea level (levels by The California Oregon Power Co.).

Average discharge.--5 years, 836 cfs.

Extremes.--Maximum discharge during year, 3,680 cfs Jan. 18 (gage height, 5.62 ft), from rating curve extended above 1,500 cfs by logarithmic plotting; minimum, 461 cfs Nov. 28.
1948-53: Maximum discharge, that of Jan. 18, 1953; minimum daily, 470 cfs Nov. 22, 1949, Jan. 3, 1950.

Remarks.--Records good. No diversion above station. Flow slightly regulated by Diamond Lake.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from tree Nov. 21 to Jan. 8; shifting-control method used Jan. 9-18, Sept. 9-30)

2.2	440
3.0	1,080
5.2	3,220

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	562	510	496	570	1,060	740	724	888	1,170	1,060	732	676
2	555	510	503	668	1,340	724	724	854	1,160	1,070	732	676
3	555	510	496	600	2,270	716	732	837	*1,150	1,080	732	668
4	555	510	510	578	1,840	700	740	871	1,130	1,070	724	668
5	555	510	510	555	1,860	692	756	964	1,150	1,050	724	676
6	555	503	503	548	2,160	684	772	1,050	1,330	1,060	724	676
7	548	503	518	562	1,860	692	756	1,080	1,630	1,060	724	660
8	555	503	496	660	1,660	716	732	1,060	1,590	1,050	716	660
9	555	503	510	1,030	1,430	740	716	998	1,490	1,020	716	660
10	540	503	615	812	1,280	764	700	964	1,410	982	708	660
11	540	525	676	740	1,140	748	684	982	1,380	964	708	660
12	532	525	684	939	1,070	748	676	973	1,390	948	708	652
13	525	532	638	1,080	1,010	724	668	982	1,370	922	700	652
14	525	532	630	922	964	708	668	998	1,320	896	700	645
15	525	523	724	*804	*922	700	660	990	1,310	880	692	645
16	525	518	708	956	896	700	676	982	1,310	854	692	645
17	525	518	692	1,720	930	692	708	990	1,320	837	692	645
18	525	510	660	3,200	896	700	708	1,080	1,340	804	692	645
19	532	510	652	2,130	837	700	732	1,340	1,310	804	692	638
20	525	510	645	1,800	828	700	788	1,380	1,260	804	692	630
21	518	507	638	1,480	804	692	854	1,320	1,220	*788	692	630
22	518	503	630	1,260	796	716	922	1,230	1,210	780	684	630
23	518	503	600	1,100	780	732	982	1,190	1,190	772	684	630
24	518	489	578	1,010	764	788	973	1,130	1,170	772	684	630
25	518	*482	600	956	756	837	998	1,110	1,140	764	684	630
26	518	489	570	896	748	796	1,030	1,110	1,120	756	724	*630
27	518	482	562	837	748	780	1,100	1,130	1,100	756	708	630
28	510	475	555	837	748	772	1,090	1,110	1,090	748	692	638
29	510	482	555	854	-	756	998	1,120	1,080	748	708	638
30	510	489	570	914	-	*756	939	1,110	1,070	740	692	645
31	510	-	555	956	-	748	-	1,120	-	740	684	-
Total	16,480	15,169	18,279	31,974	32,397	22,681	24,206	32,943	37,910	27,579	21,836	19,468
Mean	532	506	590	1,031	1,157	731	807	1,063	1,264	890	704	649
Cfsm	2.06	1.96	2.29	4.00	4.48	2.83	3.13	4.12	4.90	3.45	2.73	2.52
In.	2.38	2.19	2.63	4.61	4.67	3.27	3.49	4.75	5.46	3.98	3.15	2.81
Ac-ft	32,690	30,090	36,260	63,420	64,260	44,950	48,010	65,340	75,190	54,700	43,310	38,610

Calendar year 1952: Max 1,680 Min 475 Mean 830 Cfsm 3.22 In. 43.78 Ac-ft 602,300
Water year 1952-53: Max 3,200 Min 475 Mean 824 Cfsm 3.19 In. 43.39 Ac-ft 596,800

* Discharge measurement made on this day.

Clearwater River above Trap Creek, near Toketee Falls, Oreg.
(Formerly published as Clearwater River above Trap Creek)

Location.--Lat 43°15', long. 122°17', in SE¼ sec. 1, T. 27 S., R. 4 E., on right bank 450 ft upstream from Trap Creek and 9 miles east of Toketee Falls.

Drainage area.--41.6 sq mi.

Records available.--October 1927 to September 1953. Prior to October 1952, published as Clearwater River above Trap Creek.

Gage.--Water-stage recorder. Altitude of gage is 3,760 ft (from river-profile map). Prior to Sept. 10, 1939, water-stage recorder at site 25 ft downstream at different datum.

Average discharge.--24 years (1928-45, 1946-53), 157 cfs.

Extremes.--Maximum discharge during year, 400 cfs Jan. 18 (gage height, 2.03 ft); minimum daily, 170 cfs Nov. 28.
1927-53: Maximum discharge, 487 cfs Oct. 29, 1950 (gage height, 2.28 ft), from rating curve extended above 290 cfs by logarithmic plotting; maximum gage height, 2.40 ft Jan. 7, 1948 (backwater from log); minimum daily, 91 cfs Nov. 4-6, 1932.

Remarks.--Records good. All records presented herein include flow in Clearwater No. 1 power canal, completed in June 1953, which diverts 1 mile above station for generation of power and returns water to Clearwater River about 2 miles below station.

Revisions.--WSP 1124: Drainage area.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	178	179	178	176	204	196	185	227	262	255	209	186
2	178	179	176	178	223	194	185	223	262	255	207	186
3	178	180	174	174	283	194	187	221	264	255	206	186
4	178	180	176	174	270	192	187	223	*262	255	205	186
5	178	180	178	174	280	192	187	235	264	250	205	186
6	178	180	178	174	296	190	188	243	297	255	203	186
7	178	180	179	178	290	190	188	258	340	254	204	186
8	178	180	176	188	280	192	187	252	315	256	203	183
9	178	180	176	212	270	192	187	241	299	253	198	181
10	178	180	187	190	256	192	185	236	294	250	197	182
11	178	180	187	187	247	192	185	234	294	245	196	182
12	178	185	181	208	238	192	183	232	299	245	193	181
13	178	185	179	219	234	190	183	234	294	246	194	182
14	178	185	178	200	*230	188	181	236	286	242	197	183
15	178	185	178	*190	223	190	181	234	291	241	194	183
16	178	180	178	198	221	190	183	234	292	238	194	183
17	178	175	176	223	221	190	185	238	296	235	191	183
18	178	175	176	343	214	185	183	249	298	234	189	183
19	178	175	176	298	210	183	185	301	290	233	189	183
20	178	175	174	306	208	183	188	296	278	*231	191	183
21	178	175	176	258	204	183	198	288	275	230	190	182
22	178	175	174	234	204	185	208	268	272	229	187	182
23	178	172	172	223	202	183	216	266	272	227	185	*181
24	178	172	172	214	202	185	216	256	265	224	185	181
25	178	*172	174	212	198	185	221	252	279	221	187	180
26	178	172	174	206	198	183	234	252	274	216	204	180
27	178	172	172	200	196	185	261	249	267	212	192	180
28	178	170	172	202	196	185	261	249	259	213	179	181
29	178	172	178	198	-	185	247	254	255	213	187	180
30	178	172	178	200	-	185	238	254	255	212	186	181
31	179	-	174	200	-	*185	-	256	-	210	186	-
Total	5,519	5,322	5,477	6,537	6,498	5,836	6,003	7,691	8,450	7,335	6,033	5,482
Mean	178	177	177	211	232	188	200	248	282	237	195	183
Cfsm	4.28	4.25	4.25	5.07	5.58	4.52	4.81	5.96	6.78	5.70	4.69	4.40
In.	4.93	4.76	4.90	5.84	5.81	5.22	5.37	6.88	7.55	6.56	5.39	4.90
Ac-ft	10,950	10,560	10,860	12,970	12,890	11,580	11,910	15,250	16,760	14,550	11,970	10,870

Calendar year 1952: Max 363 Min 170 Mean 211 Cfsm 5.07 In. 68.90 Ac-ft 152,900
Water year 1952-53: Max 343 Min 170 Mean 209 Cfsm 5.02 In. 68.11 Ac-ft 151,100

Peak discharge (base, 220 cfs).--Jan. 18 (4 p.m.) 400 cfs (2.03 ft); Feb. 6 (1 a.m.) 314 cfs (1.73 ft); June 7 (6 a.m.) 350 cfs.
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 3-22, June 26, June 28 to July 19, July 21 to Aug. 4, Aug. 6 to Sept. 22, Sept. 24-30; discharge estimated on basis of records for station at mouth near Toketee Falls.

Clearwater River at mouth, near Toketee Falls, Oreg.
(Formerly published as Clearwater River at mouth)

Location (revised).--Lat 43°15'50", long. 122°25'00", in SW¼ sec. 36, T. 26 S., R. 3 E., on left bank a quarter of a mile upstream from mouth and 2¼ miles southeast of Toketee Falls.

Drainage area.--75 sq mi, approximately.

Records available.--October 1947 to September 1953. Prior to October 1952, published as Clearwater River at mouth.

Gage.--Water-stage recorder. Datum of gage is 2,437.5 ft above mean sea level (levels by The California Oregon Power Co.). Prior to Oct. 13, 1948, staff gage at same site and datum.

Average discharge.--6 years, 354 cfs.

Extremes.--Maximum discharge during year, 1,380 cfs Jan. 18 (gage height, 5.04 ft); maximum gage height, 5.33 ft Jan. 18 (momentary backwater from debris); minimum daily, 192 cfs Nov. 19.
1947-53: Maximum discharge, that of Jan. 18, 1953; minimum daily, that of Nov. 19, 1952.

Remarks.--Records good. No diversion above station. Regulation by Clearwater No. 1 powerplant.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from logs Oct. 1 to Dec. 1)

2.2	181
3.0	375
4.0	780
4.7	1,180

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	265	260	272	294	420	355	352	452	494	411	347	296
2	263	263	277	299	494	352	352	435	490	405	336	296
3	265	263	284	299	893	350	352	429	*392	408	328	292
4	265	263	287	296	850	342	355	435	463	408	336	303
5	265	263	287	296	845	340	358	390	460	408	334	262
6	265	263	289	296	1,080	338	365	490	526	423	346	338
7	265	263	303	301	898	338	362	510	685	420	322	292
8	265	265	291	332	825	342	358	498	666	412	330	292
9	265	265	291	414	700	348	352	470	622	396	*295	298
10	263	265	323	355	612	350	350	452	582	399	336	295
11	263	267	320	342	566	350	345	435	562	399	310	301
12	263	272	315	384	518	348	342	426	574	368	304	296
13	263	272	308	432	486	342	342	426	558	393	308	293
14	263	270	306	*399	460	340	338	438	530	387	309	292
15	260	267	301	362	*438	338	338	429	518	375	301	313
16	260	265	299	384	423	325	342	423	518	365	291	286
17	260	260	296	498	426	303	345	423	518	370	310	291
18	260	270	296	1,130	414	315	345	446	518	323	308	287
19	260	192	294	970	399	338	350	558	526	384	294	291
20	260	260	294	830	390	335	362	558	429	393	299	272
21	260	265	294	662	378	335	384	554	463	360	304	298
22	260	263	294	550	375	340	411	518	463	*363	306	275
23	260	263	291	486	368	348	429	514	446	358	298	281
24	260	263	289	442	365	381	429	494	403	351	308	290
25	260	*263	291	435	360	381	432	482	467	339	310	287
26	260	263	291	399	358	370	456	494	451	342	343	*284
27	260	263	289	378	358	365	514	498	359	350	311	283
28	260	260	289	375	358	365	518	494	520	339	312	280
29	260	263	294	375	-	358	494	498	408	345	319	285
30	260	263	296	381	-	*358	474	490	411	344	299	285
31	260	-	294	387	-	355	-	494	-	333	302	-
Total	8,118	7,857	9,145	13,783	15,062	10,745	11,546	14,653	15,022	11,671	9,756	8,734
Mean	262	262	295	445	538	347	385	473	501	376	315	291
Cfsm	3.49	3.49	3.93	5.93	7.17	4.63	5.13	6.31	6.68	5.01	4.20	3.88
In.	4.03	3.90	4.53	6.83	7.47	5.33	5.73	7.27	7.45	5.79	4.84	4.33
Ac-ft	16,100	15,580	18,140	27,340	29,880	21,310	22,900	29,060	29,800	23,150	19,350	17,320

Calendar year 1952: Max 745 Min 192 Mean 367 Cfsm 4.89 In. 66.57 Ac-ft 266,300
Water year 1952-53: Max 1,130 Min 192 Mean 373 Cfsm 4.97 In. 67.50 Ac-ft 269,900

* Discharge measurement made on this day.

Fish Creek at Big Camas ranger station, near Toketee Falls, Oreg.
(Formerly published as Fish Creek at Big Camas ranger station)

Location.--Lat 43°14', long. 122°26', in SE¼ sec. 10, T. 27 S., R. 3 E., on right bank half a mile upstream from Camas Creek, three-quarters of a mile east of Big Camas ranger station, and 3½ miles south of Toketee Falls.

Drainage area.--67 sq mi, approximately.

Records available:--October 1947 to September 1953. Prior to October 1952, published as Fish Creek at Big Camas ranger station.

Gage.--Water-stage recorder. Datum of gage is 2,860.44 ft above mean sea level, datum of 1929 (surveys by The California Oregon Power Co.). Prior to July 9, 1951, water-stage recorder and July 10 to Aug. 10, 1951, staff gage at site 1,000 ft upstream at datum 11.80 ft higher. Aug. 11 to Nov. 3, 1951, staff gage at site 200 ft downstream at different datum.

Average discharge.--6 years, 264 cfs.

Extremes.--Maximum discharge during year, 5,160 cfs Jan. 18 (river gage height, 7.17 ft), from rating curve extended above 700 cfs on basis of contracted-opening determination at gage height 5.97 ft, present site and datum (no flow in canal); minimum daily, 35 cfs, Nov. 27.
1947-53: Maximum discharge, that of Jan. 18, 1953; minimum daily, that of Nov. 27, 1952.

Remarks.--Records fair. All records presented herein include flow in Fish Creek power canal (completed in June 1952) which diverts water about 2 miles above station for power generation at Fish Creek powerplant; diversion discharged to North Umpqua River just below Toketee Falls.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	59	49	60	73	412	172	214	385	503	398	167	103
2	58	48	52	119	588	167	209	342	491	417	167	103
3	58	47	47	113	1,680	161	210	329	464	443	165	98
4	57	47	52	99	1,130	155	218	367	444	436	160	94
5	57	46	51	93	1,010	153	232	486	*448	436	158	100
6	56	45	51	91	1,090	149	242	590	741	467	169	114
7	55	45	56	102	878	150	239	584	1,030	478	156	95
8	55	45	55	195	720	161	224	485	924	433	150	91
9	55	45	52	588	584	175	211	418	813	398	146	87
10	54	44	170	316	499	193	199	380	707	375	142	84
11	54	49	172	331	408	195	191	358	671	355	138	82
12	52	61	153	662	356	194	181	350	665	348	135	81
13	52	65	108	824	324	187	174	359	619	323	135	81
14	52	62	94	*554	*301	178	171	383	586	309	134	79
15	51	52	85	392	290	175	166	380	600	287	128	78
16	51	49	78	*506	272	177	175	353	613	267	124	77
17	51	48	73	1,140	282	167	191	370	655	257	122	75
18	50	47	68	3,420	275	167	195	507	666	244	119	74
19	52	50	64	1,890	249	164	209	994	577	236	116	72
20	51	49	62	1,750	239	158	268	851	503	224	116	71
21	50	46	60	1,090	226	153	369	763	486	*219	115	70
22	50	45	58	755	208	158	443	635	478	216	111	70
23	49	37	56	576	181	167	462	577	469	209	110	70
24	51	*36	56	470	188	209	436	503	447	200	115	*71
25	50	36	54	397	182	261	456	455	444	194	114	69
26	49	36	53	342	178	247	564	454	440	188	195	59
27	48	35	52	287	176	236	759	444	428	184	139	64
28	48	37	53	269	175	231	675	444	423	179	126	44
29	49	42	67	279	-	221	532	471	430	176	140	57
30	49	51	88	279	-	*223	439	464	411	173	118	72
31	49	-	74	292	-	229	-	471	-	170	112	-
Total	1,622	1,394	2,274	18,294	13,101	5,733	9,254	14,952	17,176	9,239	4,242	2,391
Mean	52.3	46.5	73.4	590	468	185	308	482	573	298	137	79.7
Cfsm	0.781	0.694	1.10	8.81	6.99	2.76	4.60	7.19	8.55	4.45	2.04	1.19
In.	0.90	0.77	1.26	10.15	7.27	3.18	5.14	8.30	9.53	5.13	2.35	1.33
Ac-ft	3,220	2,760	4,510	36,290	25,990	11,370	18,360	29,660	34,070	18,330	8,410	4,740

Calendar year 1952: Max 886 Min 35 Mean 249 Cfsm 3.72 In. 50.53 Ac-ft 180,600
Water year 1952-53: Max 3,420 Min 35 Mean 273 Cfsm 4.07 In. 55.31 Ac-ft 197,700

Peak discharge (base, 900 cfs).--Jan. 18 (3:30 p.m.) 5,160 cfs; Feb. 3 (11 a.m.) 2,020 cfs; May 19 (6 p.m.) 1,060 cfs; June 7 (8:30 a.m.) 1,100 cfs.
* Discharge measurement made on this day.

North Umpqua River above Copeland Creek, near Toketee Falls, Oreg.
(Formerly published as North Umpqua River above Copeland Creek)

Location.--Lat 43°18', long. 122°32', in NE¼ sec. 23, T. 26 S., R. 2 E., on right bank half a mile upstream from Copeland Creek and 4¾ miles west of Toketee Falls.

Drainage area.--471 sq mi.

Records available.--September 1949 to September 1953. Prior to October 1952, published as North Umpqua River above Copeland Creek.

Gage.--Water-stage recorder. Altitude of gage is 1,580 ft (from river-profile map).

Extremes.--Maximum discharge during year, 14,100 cfs Jan. 18 (gage height, 12.23 ft), from rating curve extended above 3,000 cfs on basis of slope-area determination at gage height 11.30 ft; minimum daily, 684 cfs Nov. 23.
1949-53: Maximum discharge, that of Jan. 18, 1953; miniuum daily, that of Nov. 23, 1952.

Remarks.--Records good. No diversion above station. Regulation by powerplants upstream; slightly regulated by Diamond Lake.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

2.6	660	7.0	4,900
3.0	900	11.2	12,000
5.0	2,570		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	924	846	882	960	2,420	1,470	1,550	1,970	2,460	2,000	1,290	1,090
2	906	846	852	1,480	3,610	1,390	1,510	1,780	2,430	2,040	1,150	1,070
3	894	906	822	1,300	6,610	1,390	1,450	1,780	2,330	2,010	1,240	1,000
4	906	846	864	1,140	4,680	1,350	1,440	1,930	2,240	2,100	1,230	1,160
5	906	870	888	1,100	5,050	1,370	1,620	2,030	*2,300	2,010	1,290	1,220
6	942	804	930	1,080	5,520	1,350	1,720	2,250	2,770	2,040	1,160	988
7	930	918	1,060	1,280	4,420	1,300	1,640	2,390	3,870	2,070	1,340	948
8	906	810	858	1,610	3,810	1,370	1,630	2,230	3,640	2,030	1,140	981
9	924	828	870	3,000	3,120	1,500	1,660	2,110	3,200	2,010	1,110	1,040
10	840	924	1,440	2,320	2,650	1,600	1,430	2,030	2,960	1,940	1,190	1,040
11	870	864	1,250	1,860	2,400	1,550	1,350	1,980	2,840	1,860	1,180	1,060
12	822	936	1,450	2,380	2,190	1,490	1,020	1,950	2,860	1,720	1,140	988
13	1,130	981	1,290	*3,000	*2,110	1,470	1,390	1,920	2,790	1,710	1,130	780
14	906	912	1,120	2,690	1,930	1,450	1,340	1,980	2,630	1,770	1,090	1,100
15	834	864	1,150	2,060	1,890	1,300	1,250	2,010	2,630	1,730	1,080	1,050
16	858	894	1,210	2,430	1,850	1,390	1,350	2,010	2,630	1,680	1,110	1,020
17	846	894	1,070	5,450	1,970	1,370	1,480	1,880	2,660	1,480	1,130	1,040
18	798	900	1,000	12,000	1,980	1,400	1,440	2,040	2,680	1,550	1,110	995
19	954	850	1,080	6,320	1,810	1,470	1,380	3,000	2,560	1,360	1,060	1,040
20	948	850	967	5,460	1,720	1,490	1,620	2,920	2,390	1,460	1,180	750
21	858	840	1,060	4,010	1,630	1,410	1,800	2,820	2,340	*1,470	1,100	1,080
22	858	834	1,060	3,080	1,630	1,310	2,080	2,650	2,350	1,450	1,130	1,000
23	858	684	942	2,510	1,550	1,640	2,160	2,560	2,290	1,390	930	954
24	858	*798	900	2,370	1,490	1,870	2,100	2,440	2,220	1,380	1,140	995
25	858	882	918	2,200	1,470	2,150	2,160	2,340	2,200	1,310	1,160	1,020
26	738	810	954	2,110	1,450	1,890	2,260	2,400	2,100	1,120	1,350	*924
27	1,020	810	981	1,850	1,510	1,830	2,560	2,520	2,140	1,430	1,260	870
28	864	762	1,010	1,800	1,550	1,650	2,540	2,460	2,100	1,270	1,080	1,020
29	894	780	930	2,010	-	1,400	2,240	2,440	2,070	1,270	1,210	1,010
30	846	816	1,140	2,060	-	1,840	2,130	2,380	2,050	1,300	1,070	948
31	846	-	1,080	2,200	-	*1,640	-	2,370	-	1,260	1,020	-
Total	27,542	25,559	32,028	85,120	74,020	47,100	51,300	69,570	76,730	51,220	35,800	30,261
Mean	888	852	1,033	2,746	2,644	1,519	1,710	2,244	2,558	1,652	1,155	1,009
Cfsm	1.89	1.81	2.19	5.83	5.61	3.23	3.63	4.76	5.43	3.51	2.45	2.14
In.	2.17	2.02	2.53	6.72	5.84	3.72	4.05	5.49	6.06	4.04	2.83	2.39
Ac-ft	54,630	50,700	63,530	168,800	146,800	93,420	101,800	138,000	152,200	101,600	71,010	60,020

Calendar year 1952: Max 3,710 Min 684 Mean 1,634 Cfsm 3.47 In. 47.22 Ac-ft 1,186,000
Water year 1952-53: Max 12,000 Min 684 Mean 1,661 Cfsm 3.53 In. 47.86 Ac-ft 1,203,000

* Discharge measurement made on this day.

Umpqua River near Elkton, Oreg.

Location.--Lat 43°35', long. 123°33', in sec. 8, T. 23 S., R. 7 W., on right bank 4 miles south of Elkton.

Drainage area.--3,680 sq mi, approximately.

Records available.--October 1905 to September 1953 (incomplete prior to November 1908).

Gage.--Staff gage read twice daily. Datum of gage is 91.33 ft above mean sea level, datum of 1929. Prior to Jan. 1, 1910, at datum 1.48 ft higher and Jan. 1, 1910, to Sept. 30, 1929, at datum 0.96 ft higher.

Average discharge.--48 years, 7,270 cfs.

Extremes.--Maximum discharge during year, 199,000 cfs Jan. 19 (gage height, 43.0 ft, from floodmark); minimum, 1,010 cfs Oct. 14.
1905-53: Maximum discharge, 208,000 cfs Oct. 30, 1950 (gage height, 44.2 ft); minimum observed, 640 cfs July 18, 1926 (gage height, 0.71 ft).
Maximum stage known, 45.5 ft sometime in 1861.

Remarks.--Records good. Some diversions for irrigation from streams in South Umpqua River basin, but flow probably only slightly affected. Powerplants on North Umpqua River ordinarily do not affect discharge at this station.

Revisions (water years).--WSP 1184: 1927(M), 1938(M), 1943(M), 1946(M).

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from moss Oct. 1-20, July 15 to Aug. 2)

1.3	1,050	15.0	38,800
2.0	1,780	20.0	61,300
4.0	4,540	30.0	113,000
6.0	8,500	36.0	151,000
10.0	20,200		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,170	1,240	1,190	9,150	15,400	8,880	9,250	9,540	10,700	4,240	1,960	*1,780
2	1,150	1,210	1,470	9,050	20,000	8,310	8,580	9,800	9,540	4,160	1,930	1,810
3	1,150	1,190	2,580	10,900	43,400	7,340	*8,050	10,000	8,950	4,060	1,900	1,690
4	1,150	1,170	3,340	8,680	61,300	6,600	7,780	9,410	8,720	3,920	1,870	1,640
5	1,130	1,170	4,380	7,070	48,800	6,080	7,670	8,620	10,600	3,820	1,820	1,600
6	1,130	1,210	7,940	*6,320	62,300	5,640	7,560	8,140	13,900	3,710	1,770	1,660
7	1,130	1,210	10,800	5,940	48,400	5,460	7,320	7,780	17,000	3,600	1,760	1,700
8	1,120	1,210	25,000	14,000	42,000	5,460	6,650	7,730	23,200	3,470	1,750	1,670
9	1,120	1,230	16,100	42,200	31,400	6,020	6,120	7,540	22,700	3,330	1,740	1,640
10	1,150	1,230	19,900	46,700	23,200	6,400	5,810	7,380	16,300	3,220	1,710	1,600
11	1,170	1,240	37,100	23,200	17,700	6,520	5,500	7,130	13,500	3,080	1,700	1,550
12	1,160	1,290	18,300	18,600	14,300	6,710	5,120	6,730	13,000	2,980	1,690	1,430
13	1,140	1,320	14,100	32,300	11,900	6,960	4,890	6,200	12,200	2,900	1,670	1,330
14	*1,050	1,470	10,400	42,500	10,600	6,810	4,730	*5,920	10,300	2,860	1,660	1,300
15	1,090	2,280	8,360	24,800	9,950	6,240	4,620	6,180	*8,750	2,800	1,690	1,640
16	1,070	2,100	7,260	25,400	9,770	6,160	4,700	6,440	7,940	2,760	1,670	1,800
17	1,060	1,800	5,730	58,200	12,400	7,300	5,090	6,940	7,580	2,720	1,650	1,490
18	1,050	*1,540	5,020	135,000	30,000	8,300	5,660	7,820	7,150	2,670	1,640	1,390
19	1,070	1,460	4,520	151,000	*25,700	11,700	6,620	9,300	6,920	2,580	1,670	1,420
20	1,080	1,480	4,190	*75,000	18,800	20,900	6,420	13,100	6,540	2,470	1,690	1,470
21	1,120	1,480	4,000	71,600	14,800	21,400	6,400	13,700	6,220	2,370	1,770	1,500
22	1,130	1,460	4,350	37,000	12,500	21,600	6,900	14,800	5,940	2,270	1,720	1,480
23	1,140	1,420	5,510	21,600	11,300	24,600	7,230	15,400	5,640	*2,120	1,660	1,420
24	1,160	1,220	5,210	19,000	10,200	22,500	5,100	18,200	5,230	2,110	1,640	1,400
25	1,170	1,170	4,480	15,900	9,180	27,300	5,000	17,000	4,880	2,100	1,670	1,390
26	1,170	1,160	4,160	17,400	8,360	22,600	5,160	16,400	4,640	2,070	1,820	1,360
27	1,170	1,150	3,980	18,300	8,080	16,700	6,440	26,700	4,520	2,070	1,960	1,330
28	1,170	1,140	4,320	14,700	8,500	14,000	8,050	20,500	4,460	2,050	2,170	1,380
29	1,230	1,140	4,880	13,500	-	12,300	9,950	15,300	4,410	2,020	2,140	1,450
30	1,420	1,150	5,160	15,100	-	10,600	9,480	12,600	4,360	1,990	2,080	1,560
31	1,390	-	10,400	15,300	-	10,200	-	11,800	-	1,970	2,000	-
Total	35,610	40,540	264,130	‡1,005.41	640,240	358,090	197,850	344,100	285,790	88,490	55,570	45,880
Mean	1,149	1,351	8,520	32,430	22,870	11,550	6,595	11,100	9,526	2,855	1,793	1,529
Cfsm	0.312	0.367	2.32	8.81	6.21	3.14	1.79	3.02	2.59	0.776	0.487	0.415
In.	0.36	0.41	2.67	10.16	6.47	3.62	2.00	3.48	2.89	0.89	0.56	0.46
Ac-ft	70,630	80,410	523,900	‡1,994	‡1,270	710,300	392,400	682,500	566,900	175,500	110,200	91,000

Calendar year 1952: Max 66,600 Min 1,050 Mean 7,383 Cfsm 2.01 In. 27.32 Ac-ft 5,359,000
Water year 1952-53: Max 151,000 Min 1,050 Mean 9,210 Cfsm 2.50 In. 33.97 Ac-ft 6,668,000

Peak discharge (base, 52,000 cfs).--Jan. 9 (about 10 p.m.) 57,500 cfs (19.2 ft); Jan. 19 (1 a.m.) 199,000 cfs (43.0 ft); Feb. 4 (4 a.m.) 71,500 cfs (22.10 ft); Feb. 6 (12 m.) 70,100 cfs (21.80 ft).
* Discharge measurement made on this day.
‡ Expressed in thousands.

Daniels Creek near Eastside, Oreg.

Location.--Lat 43°20'45", long 124°05'25", near center sec. 2, T. 26 S., R. 12 W., on left bank at downstream side of highway bridge, 0.1 mile downstream from Morgan Creek and 5½ miles southeast of Eastside.

Drainage area.--14.5 sq mi.

Records available.--July 1950 to December 1953 (discontinued).

Gage.--Water-stage recorder. Datum of gage is 6.32 ft above mean sea level, datum of 1929.

Extremes.--1952-53: Maximum discharge during water year, 1,290 cfs Jan. 18 (gage height, 10.26 ft); minimum, 1.6 cfs several days in October.
1953: Maximum discharge during period October to December, 1,210 cfs Nov. 22 (gage height, 10.18 ft); minimum, 9.4 cfs Oct. 9.
1950-53: Maximum discharge, that of Jan. 18, 1953; minimum, 1.6 cfs Sept. 22, 1950, Sept. 21, 1951, and several days in September and October 1952.

Remarks.--Records fair. Diversions for irrigation above station of about 30 acres. No regulation.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.7	3.6	19	98	91	46	*54	87	56	19	7.4	6.8
2	1.7	3.1	51	94	116	43	50	73	49	18	7.4	6.2
3	1.7	3.0	36	70	368	41	46	59	44	17	7.6	*5.5
4	1.7	2.9	85	55	245	38	43	51	41	16	7.9	4.8
5	1.7	2.8	132	46	312	36	40	44	41	15	8.0	4.8
6	1.7	2.7	111	40	372	35	40	40	50	14	7.8	5.4
7	1.7	2.6	177	54	280	33	41	48	100	14	7.8	5.2
8	1.9	2.6	178	92	242	32	39	86	92	14	7.4	5.1
9	2.0	2.5	95	122	186	30	39	78	72	13	6.7	4.6
10	1.8	3.6	160	79	146	32	36	62	59	12	6.4	4.2
11	1.8	6.0	108	70	116	38	34	52	52	12	6.1	4.1
12	1.8	8.8	*67	90	94	59	36	45	48	12	6.1	4.2
13	1.7	14	47	132	80	56	36	42	43	12	5.8	4.2
14	1.7	39	36	107	90	47	34	41	38	*12	6.4	4.0
15	1.7	18	30	82	*99	46	32	37	35	11	7.0	3.8
16	1.9	9.7	25	254	101	137	34	35	33	11	6.4	3.7
17	1.9	7.2	22	658	176	136	69	32	31	10	6.6	3.5
18	2.0	5.6	20	1,110	185	119	58	53	29	9.8	6.6	3.2
19	2.2	5.2	28	*522	145	122	46	94	28	9.6	6.2	3.1
20	2.0	4.8	32	*706	114	202	40	*66	27	9.4	6.8	3.2
21	2.0	4.6	40	*388	94	217	37	138	25	9.2	7.0	3.4
22	2.0	4.2	61	*241	79	248	34	162	24	9.1	6.2	3.6
23	2.7	4.0	45	177	70	194	32	160	23	9.1	6.6	3.4
24	5.8	3.8	35	134	63	176	31	123	22	9.0	6.8	3.2
25	3.0	3.7	30	124	57	168	30	102	22	8.6	8.2	3.1
26	2.6	3.6	29	128	53	127	32	188	21	8.2	18	3.1
27	2.5	3.5	34	115	49	101	58	180	21	8.0	11	3.1
28	*2.5	3.4	31	96	46	90	62	128	20	7.9	9.6	7.9
29	3.7	3.4	46	86	-	72	74	99	21	7.8	13	5.5
30	3.8	4.2	118	90	-	66	87	78	20	7.6	9.2	32
31	3.6	-	82	86	-	60	-	65	-	7.4	9.1	-
Total	70.5	186.3	2,010	6,146	4,069	2,847	1,324	2,548	1,187	352.7	243.1	157.9
Mean	2.27	6.21	64.8	198	145	91.8	44.1	82.2	39.6	11.4	7.84	5.26
Cfsm	0.157	0.428	4.47	13.7	10.0	6.33	3.04	5.67	2.73	0.786	0.541	0.363
In.	0.18	0.48	5.15	15.76	10.44	7.30	3.40	6.54	3.04	0.90	0.62	0.40
Ac-ft	140	370	3,990	12,190	8,070	5,650	2,630	5,050	2,350	700	482	313

Calendar year 1952: Max 312 Min 1.7 Mean 44.4 Cfsm 3.06 In. 41.71 Ac-ft 32,250
Water year 1952-53: Max 1,110 Min 1.7 Mean 57.9 Cfsm 3.99 In. 54.21 Ac-ft 41,940

Peak discharge (base, 300 cfs).--Jan. 18 (10 a.m.) 1,290 cfs (10.26 ft); Feb. 3 (12:30 p.m.) 465 cfs (9.14 ft); Feb. 5 (10:30 p.m.) 574 cfs (9.34 ft).
* Discharge measurement made on this day.

Discharge, in cubic feet per second, 1953

Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.	Day	Oct.	Nov.	Dec.
1	38	15	76	9	16	22	353	17	19	130	52	25	18	198	58
2	24	15	183	10	118	27	321	18	*54	91	51	26	17	125	55
3	16	15	228	11	45	29	214	19	36	110	350	27	16	*108	58
4	13	14	364	12	28	27	152	20	28	192	311	28	16	78	49
5	11	19	475	13	23	24	112	21	24	157	170	29	16	62	44
6	11	40	485	14	20	24	86	22	22	1,010	118	30	15	74	38
7	10	30	342	15	18	26	68	23	20	861	90	31	15	-	35
8	9.6	24	314	16	17	100	57	24	19	359	70				
Total													752.6	4,006	5,379
Mean													24.3	134	174
Cubic feet per second per square mile													1.68	9.24	12.0
Runoff in inches													1.93	10.27	13.80
Runoff in acre-feet													1,490	7,950	10,670

Calendar year 1953: Max 1,110 Min 3.1 Mean 79.5 Cfsm 5.48 In. 74.40 Ac-ft 57,500

Peak discharge (base, 300 cfs).--Nov. 22 (11:30 a.m.) 1,210 cfs (10.18 ft); Dec. 6 (9 a.m.) 622 cfs (9.42 ft); Dec. 19 (1:30 p.m.) 676 cfs (9.51 ft).
* Discharge measurement made on this day.
Note.--Result of discharge measurement made Jan. 17, 1954, 324 cfs.

South Fork Coquille River at Powers, Oreg.

Location.--Lat 42°53'40", long. 124°04'10", in SE¼ sec. 12, T. 31 S., R. 12 W., on left bank half a mile northeast of bridge at Powers and three-quarters of a mile upstream from Woodward Creek.

Drainage area.--169 sq mi.

Records available.--September 1916 to September 1926, October 1928 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 197.42 ft above mean sea level, datum of 1929, suppelmentary adjustment of 1947. Prior to Nov. 17, 1938, staff or wire-weight gages at various sites within 1 mile of present site at different datums.

Average discharge.--34 years (1916-26, 1929-53), 747 cfs.

Extremes.--Maximum discharge during year, 24,900 cfs Jan. 18 (gage height, 17.64 ft), from rating curve extended above 15,000 cfs on basis of shape of previous curve defined by contracted-opening determination at gage height 18.14 ft; minimum, 14 cfs Oct. 6.
1916-26, 1928-53: Maximum discharge, 30,500 cfs Dec. 28, 1945 (gage height, 20.57 ft), from rating curve extended above 14,000 cfs on basis of contracted-opening determination at gage height 18.14 ft; minimum, 12 cfs Sept. 22-25, 27-30, 1939.

Remarks.--Records good except those for periods of backwater from tree, which are fair. Small diversions for irrigation above station. No regulation.

Revisions (water years).--WSP 1184: 1946(M).

Rating tables, water year 1952-53, except periods of backwater from tree (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
1.0	10	3.0	515	1.1	30	3.0	670
1.1	15	4.5	1,650	1.3	57	4.0	1,440
1.3	31	7.0	4,250	1.5	91	6.0	3,650
1.6	70	10.0	8,550	2.0	213	10.0	9,630
2.0	149	12.0	11,900	2.5	400	16.0	21,200
2.5	300						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	22	475	1,680	1,060	562	*853	1,370	797	162	63	78
2	16	21	1,110	1,980	1,310	517	784	1,110	676	155	62	*67
3	16	19	852	1,520	5,130	534	742	895	574	150	60	60
4	16	17	2,750	1,130	3,270	495	730	742	506	145	62	56
5	16	16	2,640	852	2,800	465	736	628	460	138	65	53
6	14	17	3,210	705	2,950	436	712	534	485	133	60	50
7	16	17	7,850	2,370	2,470	414	664	676	610	131	59	49
8	16	17	4,250	6,580	2,750	400	574	1,050	706	126	57	47
9	16	16	2,280	10,900	2,030	386	528	1,220	712	124	56	44
10	17	18	5,510	4,320	1,420	436	528	1,060	718	118	53	42
11	17	31	3,350	2,820	1,070	760	500	874	616	115	51	40
12	17	45	2,470	4,000	895	1,510	465	742	550	113	49	40
13	17	166	*1,780	6,160	772	1,140	436	634	495	113	44	38
14	17	300	1,250	4,560	718	895	414	634	460	*110	44	38
15	16	195	901	2,910	706	881	404	592	400	107	44	36
16	16	103	712	4,820	730	1,910	550	550	360	105	43	36
17	16	70	563	8,790	2,930	1,900	1,550	512	331	101	43	36
18	17	56	465	18,900	3,350	2,190	1,410	634	308	97	43	35
19	18	47	445	8,620	2,000	2,330	1,050	*1,280	287	93	43	34
20	19	42	450	*12,800	1,350	2,320	881	1,150	273	91	43	34
21	18	39	435	6,080	1,050	2,210	778	2,560	252	87	43	33
22	18	36	495	3,260	938	1,940	682	2,830	239	86	43	33
23	18	33	460	2,070	839	1,820	574	2,600	223	86	43	33
24	25	32	407	1,460	730	2,270	495	2,090	213	80	42	33
25	23	31	415	1,450	634	2,460	440	1,720	204	78	44	31
26	22	29	521	2,140	586	1,760	436	7,250	196	75	196	31
27	*20	28	1,130	1,620	550	1,320	1,060	5,690	184	73	143	30
28	21	27	908	*1,220	550	1,190	1,030	2,830	179	71	93	39
29	24	27	1,400	1,120	-	1,040	1,170	1,820	184	70	179	46
30	25	28	3,450	1,090	-	946	1,480	1,310	176	68	133	54
31	23	-	2,170	1,030	-	916	-	1,020	-	65	93	-
Total	566	1,545	55,084	128,957	45,588	38,353	22,656	48,607	12,374	3,266	2,096	1,276
Mean	18.3	51.5	1,777	4,160	1,628	1,237	755	1,568	412	105	67.6	42.5
Cfsm	0.108	0.305	10.5	24.6	9.63	7.32	4.47	9.28	2.44	0.621	0.400	0.251
In.	0.12	0.34	12.12	28.38	10.03	8.44	4.99	10.70	2.72	0.72	0.46	0.28
Ac-ft	1,120	3,060	109,300	255,800	90,420	76,070	44,940	96,410	24,540	6,480	4,160	2,530

Calendar year 1952: Max 8,150 Min 14 Mean 709 Cfsm 4.20 In. 57.10 Ac-ft 514,800
Water year 1952-53: Max 18,900 Min 14 Mean 987 Cfsm 5.84 In. 79.30 Ac-ft 714,800

Peak discharge (base, 8,000 cfs).--Dec. 7 (1:30 a.m.) 8,950 cfs (10.25 ft); Dec. 10 (8:30 a.m.) 8,690 cfs (10.09 ft); Jan. 9 (2:30 a.m.) 15,600 cfs (14.04 ft); Jan. 18 (2:30 p.m.) 24,900 cfs (17.64 ft); May 26 (6:30 p.m.) 10,800 cfs (10.66 ft).
* Discharge measurement made on this day.
Note.--Backwater from tree Feb. 3-12, 17-22, Mar. 22-31.

Rogue River above Prospect, Oreg.

Location.--Lat 42°47', long. 122°30', in NE¼ sec. 19, T. 32 S., R. 3 E., on left bank 1½ miles upstream from intake of diversion of The California Oregon Power Co., 2 miles northwest of Prospect, 3 miles upstream from Mill Creek, and at mile 169.7 (Geological Survey river-profile survey).

Drainage area.--332 sq mi.

Records available.--January 1908 to February 1912 (incomplete), October 1923 to September 1953. Published as "near Prospect" 1924-25, and as North Fork Rogue River at or near Prospect 1908-9, 1911-12.

Gage.--Water-stage recorder. Altitude of gage is 2,620 ft (from river-profile map). Prior to Feb. 17, 1912, staff gage at several sites within a few hundred feet upstream, at various datums.

Average discharge.--31 years (1910-11, 1923-53), 770 cfs.

Extremes.--Maximum discharge during year, 10,500 cfs Jan. 18 (gage height, 7.95 ft), from rating curve extended above 5,000 cfs; minimum, 365 cfs Dec. 7.
1908-12, 1923-53: Maximum discharge, 11,900 cfs Dec. 28, 1945 (gage height, 8.4 ft, from floodmark), from rating curve extended above 5,000 cfs; minimum observed, 200 cfs Nov. 20, 1931 (gage height, 1.07 ft).
Flood of Nov. 22 or 23, 1909, may have exceeded 11,900 cfs.

Remarks.--Records good. No diversion or regulation above station.

Cooperation.--Water-stage-recorder graph furnished by The California Oregon Power Co.

Revisions (water years).--WSP 1248: 1925, 1927(M).

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from log Jan. 9-17)

1.6	430	5.0	4,340
2.0	655	7.5	9,380
3.0	1,510		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	546	485	512	518	1,440	790	846	1,380	1,690	1,350	674	595
2	540	485	512	573	1,690	755	862	1,270	1,620	1,350	681	584
3	534	*485	490	601	4,390	741	902	1,240	1,600	1,400	700	578
4	534	480	490	573	3,540	727	950	1,370	1,520	1,390	668	573
5	534	480	502	562	3,000	720	1,030	1,690	1,560	1,370	655	573
6	534	480	496	551	4,050	720	1,080	1,930	2,400	1,380	707	619
7	534	480	430	595	3,200	734	1,000	1,910	3,530	1,380	655	573
8	529	480	468	734	2,620	783	918	1,710	3,000	1,310	637	568
9	529	480	518	1,960	2,050	854	862	1,490	2,450	1,220	631	556
10	524	480	637	1,340	1,700	918	822	1,340	2,160	1,180	625	556
11	524	496	714	1,080	1,470	910	798	1,300	2,110	1,150	619	556
12	524	534	748	1,720	1,330	894	776	1,300	2,090	1,110	613	556
13	524	551	649	2,230	1,230	854	748	1,360	1,960	*1,070	601	551
14	524	546	601	1,550	1,160	814	734	1,410	1,800	1,040	619	551
15	524	518	578	1,180	1,100	806	741	1,370	1,860	995	619	551
16	524	507	568	1,230	1,050	798	762	1,290	1,920	950	607	546
17	518	496	546	3,240	1,100	769	846	1,380	2,000	926	595	540
18	518	496	534	8,880	1,070	762	854	*1,630	2,050	894	595	540
19	524	490	534	5,150	959	762	934	3,060	1,910	878	590	534
20	512	490	518	4,230	918	748	1,150	2,690	1,690	838	595	534
21	507	490	512	2,970	886	734	1,470	2,330	1,640	814	584	534
22	502	485	*512	2,070	854	741	1,720	2,000	1,640	790	578	534
23	496	474	496	1,630	814	755	1,810	1,810	1,620	776	578	534
24	502	468	485	1,400	790	910	1,660	1,680	1,530	755	584	529
25	502	468	496	1,270	776	1,040	1,650	1,540	1,510	741	590	529
26	496	463	496	1,170	762	968	1,780	1,500	1,480	734	*878	529
27	496	458	496	*1,060	769	950	2,260	1,480	1,460	727	707	529
28	490	452	480	1,010	790	950	2,260	1,500	1,420	714	631	534
29	490	458	496	1,060	-	910	1,810	1,640	1,400	700	681	534
30	490	468	529	1,150	-	*894	1,540	1,590	1,370	694	625	529
31	485	-	518	1,200	-	878	-	1,600	-	681	607	-
Total	16,010	14,623	16,561	54,487	45,508	25,589	35,575	50,790	55,990	31,307	19,729	16,549
Mean	516	487	534	1,758	1,625	825	1,186	1,638	1,866	1,010	636	552
Cfsm	1.55	1.47	1.61	5.30	4.89	2.48	3.57	4.93	5.62	3.04	1.92	1.66
In.	1.79	1.64	1.86	6.10	5.10	2.87	3.99	5.69	6.27	3.51	2.21	1.85
Ac-ft	31,760	29,000	32,850	108,100	90,260	50,760	70,560	100,700	111,100	62,100	39,130	32,820

Calendar year 1952: Max 2,940 Min 430 Mean 999 Cfsm 3.01 In. 40.96 Ac-ft 725,200
Water year 1952-53: Max 8,880 Min 430 Mean 1,049 Cfsm 3.16 In. 42.88 Ac-ft 759,100

Peak discharge (base 2,700 cfs).--Jan. 18 (4 p.m.) 10,500 cfs (7.95 ft); Feb. 3 (4 p.m.) 5,080 cfs (5.45 ft); Feb. 6 (6 a.m.) 4,470 cfs (5.08 ft); May 19 (12 m.) 3,280 cfs (4.33 ft); June 7 (11 a.m.) 3,640 cfs (4.56 ft).
* Discharge measurement made on this day.

South Fork Rogue River near Prospect, Oreg.

Location.--Lat 42°42', long. 122°23', in NE¼ sec. 18, T. 33 S., R. 4 E., on right bank 500 ft downstream from diversion dam and intake of South Fork power canal, ⅛ an eighth of a mile downstream from Imnaha Creek, and 6 miles southeast of Prospect.

Drainage area.--79 sq mi, approximately.

Records available.--April 1924 to September 1931, October 1949 to September 1953. Equivalent records for period October 1931 to September 1949, may be obtained from combined flow of South Fork Rogue River above Imnaha Creek near Prospect and Imnaha Creek near Prospect.

Gage.--Water-stage recorder. Altitude of gage is 3,350 ft (from river-profile map). Apr. 26, 1924, to Sept. 30, 1931, water-stage recorder at site about an eighth of a mile downstream at different datum.

Average discharge.--11 years (1924-31, 1949-53), 172 cfs.

Extremes.--Maximum discharge during year, 1,760 cfs Jan. 18, from river rating curve extended above 780 cfs by logarithmic plotting; minimum daily, 78 cfs Dec. 28.
1924-31, 1949-53: Maximum discharge, that of Jan. 18, 1953; minimum, about 35 cfs in September 1931, during period of no gage-height record.

Remarks.--Records good. All records presented herein include flow in South Fork power canal (completed in March 1932) which diverts 500 ft above station and returns water to Rogue River above South Fork Rogue River; practically no storage above diversion dam.

Cooperation.--Electrical-output record for power canal furnished by the California Oregon Power Co.

Revisions (water years).--WSP 1184: 1930(M).

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	107	92	84	83	309	197	181	315	406	318	151	121
2	106	92	88	97	311	191	183	292	399	311	150	123
3	104	90	82	88	636	183	188	284	387	311	150	121
4	103	*90	85	84	661	180	194	309	369	320	148	119
5	105	91	84	83	779	175	203	358	376	320	146	119
6	105	90	83	84	1,250	171	207	398	490	340	146	118
7	105	89	99	88	984	171	204	391	840	320	145	114
8	104	88	85	107	737	171	201	352	632	300	144	114
9	103	89	87	174	603	174	194	324	527	280	144	112
10	103	88	124	147	515	179	190	302	482	260	142	110
11	103	90	127	126	448	166	185	295	473	250	140	109
12	99	95	118	157	400	173	183	290	484	240	139	110
13	101	99	102	182	373	169	181	296	460	230	137	108
14	99	106	96	155	345	167	180	315	433	*222	136	106
15	99	92	103	141	320	166	178	308	446	212	140	105
16	98	91	90	161	304	167	182	292	449	203	136	105
17	96	89	88	448	309	164	197	299	459	196	136	105
18	100	89	87	1,420	289	164	202	339	483	191	133	104
19	102	89	84	1,040	272	164	207	*747	451	188	133	103
20	98	87	87	836	260	161	230	610	410	184	135	103
21	96	87	83	605	248	157	271	482	399	173	133	102
22	96	86	87	461	239	157	320	416	401	172	129	104
23	96	85	*81	391	232	162	348	407	396	169	129	103
24	97	83	80	341	223	*175	344	384	371	168	*129	103
25	96	85	83	300	213	185	358	368	363	163	127	100
26	95	84	80	276	208	181	392	377	351	159	148	100
27	92	83	81	253	205	182	479	381	344	157	138	98
28	92	81	78	*246	202	186	450	384	338	156	134	100
29	92	81	84	247	-	183	384	396	330	157	140	106
30	92	84	91	249	-	183	344	396	326	155	140	100
31	92	-	81	247	-	182	-	403	-	154	129	-
Total	3,076	2,665	2,792	9,317	11,875	5,386	7,860	11,510	13,075	6,979	4,307	3,245
Mean	99.2	88.8	90.1	301	424	174	252	371	436	225	139	108
Cfsm	1.26	1.12	1.14	3.81	5.37	2.20	3.19	4.70	5.52	2.85	1.76	1.37
In.	1.45	1.25	1.31	4.39	5.59	2.54	3.56	5.42	6.16	3.29	2.03	1.53
Ac-ft	6,100	5,290	5,540	18,480	23,550	10,680	15,000	22,830	25,930	13,840	8,540	6,440

Calendar year 1952: Max 726 Min 78 Mean 238 Cfsm 3.01 In. 41.01 Ac-ft 172,800
Water year 1952-53: Max 1,420 Min 78 Mean 224 Cfsm 2.84 In. 38.52 Ac-ft 162,200

Peak discharge (base, 600 cfs).--Jan. 18 (5 p.m.) 1,760 cfs; Feb. 3 (4 p.m.) 851 cfs; Feb. 6 (2 a.m.) 1,360 cfs; May 19 (5 p.m.) 895 cfs; June 7 (7 a.m.) 972 cfs.
* Discharge measurement made on this day.

Middle Fork Rogue River near Prospect, Oreg.

Location.--Lat 42°44', long. 122°24', in NE¼NE¼ sec. 1, T. 33 S., R. 3 E., on right bank 850 ft downstream from diversion dam and intake of Middle Fork power canal and 4½ miles southeast of Prospect.

Drainage area.--57 sq mi, approximately.

Records available.--May 1925 to September 1953 (includes flow of Middle Fork power canal since completion Nov. 19, 1931).

Gage.--Water-stage recorder. Datum of gage is 2,619 ft above mean sea level (levels by The California Oregon Power Co.). Prior to Nov. 10, 1949, water-stage recorder and staff gage at various sites and datums within 150 ft of present gage.

Average discharge.--28 years, 183 cfs.

Extremes.--Maximum discharge during year, 1,750 cfs Jan. 18, from river rating curve extended from 630 to 1,720 cfs by logarithmic plotting; minimum daily, 135 cfs Oct. 1.
1925-53: Maximum discharge, 2,760 cfs Nov. 29, 1942, from river rating curve extended from 1,100 to 2,730 cfs; minimum daily, 72 cfs Aug. 24 to Sept. 5, 1931.

Remarks.--Records good. All records presented herein include flow in Middle Fork power canal which diverts 850 ft above station for hydroelectric power and returns water to Rogue River above South Fork Rogue River.

Cooperation.--Water-stage-recorder graph for canal furnished by The California Oregon Power Co.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	135	150	149	154	342	208	205	260	358	317	203	170
2	152	149	151	171	336	203	205	244	346	325	203	169
3	153	147	149	161	668	198	205	244	334	337	202	168
4	153	*147	150	156	612	194	205	254	322	337	197	167
5	152	150	150	155	780	190	211	276	322	331	195	167
6	150	150	157	154	1,210	189	216	299	493	334	195	166
7	152	150	180	167	895	190	212	293	626	331	193	166
8	153	149	161	222	686	190	207	265	507	308	190	165
9	154	149	156	343	560	194	202	244	444	285	190	163
10	154	150	202	257	475	198	194	238	424	280	188	165
11	*153	152	197	235	398	198	194	233	424	274	186	166
12	152	156	183	283	356	198	189	238	430	269	184	166
13	151	160	169	311	314	190	185	238	400	263	186	165
14	152	161	162	272	298	190	185	244	382	*269	186	167
15	152	154	159	233	286	189	182	238	400	274	186	171
16	152	152	156	281	281	194	186	230	412	258	181	171
17	153	150	154	598	286	190	191	240	430	254	179	170
18	157	151	152	1,360	275	190	186	300	458	254	176	170
19	155	151	151	996	254	194	196	*570	418	248	175	170
20	154	150	151	793	248	190	204	500	382	239	175	170
21	153	149	150	561	238	190	228	430	382	228	172	170
22	152	149	*151	442	228	200	270	352	382	224	172	170
23	153	148	*148	389	222	210	289	346	382	220	172	169
24	155	147	145	347	222	*233	283	328	352	220	172	168
25	153	146	144	312	212	228	283	310	352	214	*172	167
26	152	145	144	279	212	223	311	334	346	215	198	167
27	150	144	143	252	211	223	452	340	340	207	179	166
28	150	144	143	*252	208	224	377	352	340	204	177	171
29	151	144	148	258	-	219	316	358	334	205	181	169
30	151	146	153	263	-	214	272	352	322	208	173	170
31	153	-	148	258	-	210	-	358	-	206	170	-
Total	4,712	4,490	4,856	10,915	11,313	6,251	7,041	9,508	11,844	8,138	5,708	5,039
Mean	152	150	157	352	404	202	235	307	395	263	184	168
Cfsm	2.67	2.63	2.75	6.18	7.09	3.54	4.12	5.39	6.93	4.61	3.23	2.95
In.	3.07	2.93	3.17	7.12	7.38	4.08	4.59	6.20	7.73	5.31	3.72	3.29
Ac-ft	9,350	8,910	9,630	21,650	22,440	12,400	13,970	18,860	23,490	16,140	11,320	9,990

Calendar year 1952: Max 502 Min 135 Mean 224 Cfsm 3.93 In. 53.42 Ac-ft 162,400
Water year 1952-53: Max 1,360 Min 135 Mean 246 Cfsm 4.32 In. 58.59 Ac-ft 178,200

Peak discharge (base, 500 cfs).--Jan. 18 (4:30 p.m.) 1,750 cfs; Feb. 3 (2 p.m.) 874 cfs; Feb. 6 (12:30 a.m.) 1,390 cfs; May 19 (3 to 6 p.m.) 626 cfs; June 7 (6 a.m.) 710 cfs.
* Discharge measurement made on this day.

Red Blanket Creek near Prospect, Oreg.

Location.--Lat 42°47', long. 122°26', in NE¼ sec. 23, T. 32 S., R. 3 E., on right bank 3 miles northeast of Prospect.

Drainage area.--40 sq mi, approximately.

Records available.--May 1925 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 2,780 ft (from river-profile map). Prior to Sept. 7, 1949, staff gages at several sites within 2½ miles of present site at various datums.

Average discharge.--28 years, 111 cfs.

Extremes.--Maximum discharge during year, 1,970 cfs Jan. 18 (gage height, 6.02 ft), from rating curve extended above 360 cfs; mimimum, 71 cfs, occurred sometime during period Nov. 7-10.

1925-53: Maximum discharge, that of Jan. 18, 1953; minimum observed, 34 cfs Sept. 3, 4, 25, Oct. 9, 16, 1931.

Remarks.--Records good except those for periods of no gage-height record or shifting control, which are fair. One diversion above station for irrigation below station.

Rating tables, water year 1952-53, except period of shifting control (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 26				Apr. 27 to Sept. 30	
2.6	67	4.0	465	2.7	84
2.8	95	5.0	1,030	3.0	147
3.0	136	5.5	1,440	3.5	287
3.5	280			4.0	470

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	75	a80	84	184	124	129	172	192	233	129	104
2	84	75	a85	99	199	122	129	162	190	236	129	102
3	83	*75	a80	92	416	120	131	157	190	248	129	102
4	82	74	a80	89	334	118	134	164	184	251	126	100
5	82	74	a85	88	373	118	141	182	192	251	124	100
6	80	72	a80	88	545	115	144	190	257	257	124	98
7	82	72	a75	99	408	115	139	187	369	260	122	98
8	80	a72	a80	113	324	118	131	177	304	248	120	98
9	80	a72	a90	196	280	120	127	167	275	236	120	97
10	82	a72	a110	152	244	124	122	157	257	233	117	95
11	80	a76	a130	136	223	124	118	154	257	227	117	97
12	80	a82	a140	184	202	124	113	152	263	221	115	95
13	79	84	a120	211	190	120	111	157	251	215	115	95
14	79	83	a100	168	182	118	108	160	242	*215	115	95
15	79	a80	a95	141	173	115	108	154	251	206	115	95
16	77	77	a90	170	168	118	109	147	254	203	113	93
17	77	77	a90	488	176	113	118	150	269	192	113	93
18	80	77	a85	1,370	165	115	113	*188	281	190	111	93
19	80	76	a85	580	154	118	120	344	269	187	111	91
20	79	a75	a80	460	152	115	131	289	248	180	111	91
21	77	a75	a80	338	144	111	154	236	248	172	111	89
22	77	a75	*80	265	141	118	176	212	251	170	111	89
23	77	a75	79	223	136	122	182	209	248	164	111	89
24	79	a72	77	199	131	144	173	194	239	157	109	89
25	a78	a72	77	184	129	144	176	184	239	154	*109	88
26	a78	a72	76	170	129	141	190	190	239	147	133	86
27	a76	a72	76	*159	127	139	272	190	239	142	113	86
28	a76	a72	76	157	127	139	230	190	236	140	111	88
29	a76	a72	82	157	-	134	197	192	233	138	113	86
30	75	a75	86	159	-	*134	182	190	233	136	109	88
31	75	-	80	159	-	131	-	190	-	133	106	-
Total	2,453	2,252	2,729	7,178	6,156	3,831	4,408	5,767	7,400	6,142	3,612	2,810
Mean	79.1	75.1	88.0	232	220	124	147	186	247	198	117	93.7
Cfsm	1.98	1.88	2.20	5.80	5.50	3.10	3.68	4.65	6.18	4.95	2.92	2.34
In.	2.28	2.09	2.54	6.67	5.72	3.56	4.10	5.36	6.88	5.71	3.36	2.61
Ac-ft	4,870	4,470	5,410	14,240	12,210	7,600	8,740	11,440	14,680	12,180	7,160	5,570

Calendar year 1952: Max 334 Min 72 Mean 142 Cfsm 3.55 In. 48.45 Ac-ft 103,400
Water year 1952-53: Max 1,370 Min 72 Mean 150 Cfsm 3.75 In. 50.88 Ac-ft 108,600

Peak discharge (base, 300 cfs).--Jan. 18 (3:30 p.m.) 1,970 cfs (6.02 ft); Feb. 3 (1 p.m.) 535 cfs (4.14 ft); Feb. 6 (10:30 a.m.) 698 cfs (4.46 ft); May 19 (5 a.m.) 358 cfs (3.71 ft); June 7 (10 a.m.) 383 cfs (3.70 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for Rogue River above Prospect and Middle and South Forks Rogue River near Prospect.

Note.--Shifting-control method used June 7 to July 31.

Red Blanket power canal near Prospect, Oreg.

Location.--Lat 42°45', long. 122°27', in SE¼ sec. 27, T. 32 S., R. 3 E., on right bank 600 ft downstream from headgate and diversion dam and 2 miles east of Prospect.

Records available.--November 1931 to September 1953 (discontinued).

Gage.--Water-stage recorder and concrete control. Datum of gage is 2,612 ft above mean sea level (levels by The California Oregon Power Co.).

Average discharge.--21 years (1932-53), 70.9 cfs.

Extremes.--1931-53: Maximum daily discharge, 113 cfs Feb. 1, 2, 1953; no flow for part of each day Sept. 24, 25, 1932.

Remarks.--Records good except those for periods of no gage-height record, which are fair. This canal, completed in October 1931, diverts water from Red Blanket Creek into Main power canal to supplement flow of Rogue River above Prospect diversion dam.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	86	78	83	a95	113	a105	99	6.7	97	96	102	92
2	86	78	81	100	113	106	103	6.6	97	97	102	92
3	86	*78	79	a95	109	105	103	6.6	97	98	102	92
4	84	78	79	a95	97	105	103	6.6	97	98	102	92
5	83	78	80	95	a95	105	103	6.4	97	97	102	92
6	83	77	81	95	a85	105	101	6.2	97	97	102	92
7	82	77	96	97	a85	104	35	6.0	97	97	99	92
8	82	77	92	97	a80	66	8.1	5.6	98	97	99	92
9	81	76	83	97	a80	102	7.9	86	97	97	99	96
10	81	76	92	97	a80	104	7.9	97	97	97	100	97
11	81	76	92	97	a85	101	7.8	97	97	97	102	95
12	81	79	92	97	a100	97	7.8	97	97	97	102	95
13	81	84	92	97	a100	97	7.8	97	97	97	102	95
14	81	88	92	97	a100	97	7.6	97	97	97	102	94
15	81	86	95	95	96	97	7.6	97	96	*97	102	94
16	81	83	97	95	96	100	7.6	97	96	97	102	94
17	81	83	94	95	96	102	7.8	98	95	97	102	93
18	81	83	91	99	96	103	7.6	*98	95	97	102	92
19	a80	84	89	100	96	104	7.4	100	95	100	101	92
20	a80	83	88	101	a95	105	7.4	99	95	101	100	92
21	79	83	86	99	a95	105	7.4	99	96	100	100	92
22	79	81	83	95	a55	105	7.4	100	96	100	100	92
23	79	81	*82	92	14	105	7.2	99	96	100	100	92
24	79	80	80	91	a13	105	7.2	98	96	100	98	90
25	78	79	78	89	a13	100	7.2	97	96	100	98	90
26	78	78	78	88	13	97	7.2	96	96	100	*94	89
27	78	78	a78	a85	a65	97	7.2	96	96	101	92	89
28	77	78	a77	a90	a105	96	7.2	97	96	101	92	88
29	77	78	a85	a100	-	95	7.2	97	96	101	92	88
30	78	78	87	111	-	*95	6.9	97	96	102	92	87
31	78	-	88	112	-	95	-	97	-	102	92	-
Total	2,502	2,396	2,670	2,988	2,270	3,105	819.4	2,283.7	2,891	3,055	3,076	2,762
Mean	80.7	79.9	86.1	96.4	81.1	100	27.3	73.7	96.4	98.5	99.2	92.1
Ac-ft	4,960	4,750	5,300	5,930	4,500	6,160	1,630	4,530	5,730	6,060	6,100	5,480

Calendar year 1952: Max 104 Min 4.5 Mean 78.0 Ac-ft 56,640
Water year 1952-53: Max 113 Min 5.6 Mean 84.4 Ac-ft 61,130

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage when available and records for Main power canal near Prospect.

Rogue River below South Fork Rogue River, near Prospect, Oreg.

Location.--Lat 42°42', long. 122°36', in NW¼ sec. 16, T. 33 S., R. 2 E., on right bank at downstream side of county road bridge 6 miles southwest of Prospect and at mile 160.4 (Geological Survey river-profile survey).

Drainage area.--643 sq mi.

Records available.--April 1929 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 1,708 ft (from river-profile map).

Average discharge.--24 years, 1,726 cfs.

Extremes.--Maximum discharge during year, 20,500 cfs Jan. 18 (gage height, 12.50 ft), from rating curve extended above 5,000 cfs on basis of slope-area determination at gage height 8.6 ft; minimum, 698 cfs Oct. 6; minimum daily, 1,100 cfs Nov. 25, 28-30.
1929-53: Maximum discharge, that of Jan. 18, 1953; minimum since intake was lowered on Aug. 18, 1934, 493 cfs Sept. 1, 1934 (prior to Aug. 18, 1934, minimum discharge not determined).

Remarks.--Records good. Small diversions above station for irrigation. Considerable diurnal fluctuation caused by powerplant 4 miles above station.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Backwater from logs Oct. 23 to Jan. 8)

Oct. 1 to Jan. 18		Jan. 19 to Sept. 30	
1.0	1,080	1.3	1,270
2.0	1,920	2.0	1,880
4.0	4,130	4.0	4,130
6.0	7,140	8.0	10,800
11.0	17,000		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,320	1,160	1,170	1,280	3,250	2,140	2,160	2,850	3,510	2,940	1,640	1,430
2	1,300	1,170	1,190	1,400	3,400	2,090	2,120	2,640	3,390	2,920	1,640	1,400
3	1,290	*1,150	1,170	1,390	7,510	2,060	2,170	2,560	3,350	2,990	1,640	1,390
4	1,300	1,130	1,160	1,350	6,800	2,000	2,210	2,650	3,240	3,000	1,620	1,370
5	1,290	1,160	1,170	1,360	6,850	1,970	2,300	3,140	3,250	2,960	1,590	1,350
6	1,290	1,150	1,180	1,310	9,470	1,950	2,390	3,470	4,360	2,950	1,640	1,410
7	1,300	1,150	1,310	1,510	7,380	1,960	2,270	3,480	6,240	2,960	1,590	1,370
8	1,290	1,140	1,240	1,910	6,060	2,000	2,190	3,210	5,350	2,850	1,570	1,360
9	1,290	1,140	1,240	3,780	4,870	2,100	2,070	2,960	4,680	2,680	1,550	1,360
10	1,280	1,140	1,630	2,800	4,200	2,200	1,990	2,740	4,260	2,620	1,530	1,350
11	1,280	1,160	1,670	2,320	3,720	2,210	1,940	2,640	4,130	2,530	1,510	1,340
12	1,260	1,220	1,650	3,140	3,400	2,200	1,890	2,630	4,130	2,500	1,490	1,350
13	1,270	1,270	1,510	3,870	3,180	2,140	1,830	2,710	3,970	*2,420	1,490	1,340
14	1,270	1,290	1,390	3,060	3,050	2,040	1,790	2,800	3,730	2,340	1,490	1,330
15	1,260	1,220	1,340	2,490	2,900	1,980	1,790	2,740	3,790	2,300	1,490	1,310
16	1,260	1,190	1,310	2,650	2,800	2,020	1,840	2,630	3,830	2,200	1,460	1,320
17	1,260	1,170	1,270	6,030	2,960	2,000	1,980	2,720	3,900	2,160	1,450	1,330
18	1,270	1,160	1,240	16,900	2,920	2,000	1,990	3,050	4,030	2,100	1,420	1,310
19	1,310	1,170	1,240	10,400	2,880	2,060	2,070	5,410	3,850	2,060	1,410	1,300
20	1,260	1,160	1,250	8,290	2,590	2,050	2,320	*4,970	3,520	2,020	1,410	1,300
21	1,260	1,140	1,220	6,040	2,490	2,020	2,740	4,380	3,450	1,930	1,430	1,300
22	1,230	1,130	1,220	4,600	2,420	2,150	3,100	3,830	3,420	1,910	1,410	1,300
23	1,180	1,120	1,180	3,800	2,330	2,200	3,290	3,690	3,410	1,850	1,410	1,290
24	1,180	1,130	*1,140	3,200	2,240	2,520	3,170	3,530	3,270	1,820	1,410	1,290
25	1,180	1,100	1,200	2,900	2,190	2,720	3,140	3,290	3,210	1,750	1,410	1,270
26	1,170	1,110	1,130	2,800	2,140	2,560	3,350	3,420	3,170	1,740	1,820	1,270
27	1,180	1,120	1,180	2,600	2,170	2,460	4,130	3,460	3,120	1,710	*1,650	1,280
28	1,170	1,100	1,170	2,500	2,160	2,460	4,050	3,400	3,070	1,690	1,520	1,270
29	1,180	1,100	1,210	*2,640	-	2,330	3,450	3,490	3,040	1,680	1,520	1,290
30	1,170	1,100	1,330	2,740	-	*2,280	3,090	3,410	2,980	1,660	1,490	1,270
31	1,170	-	1,260	2,800	-	2,210	-	3,410	-	1,660	1,450	-
Total	38,720	34,650	39,570	113,860	108,130	67,080	74,820	101,310	112,650	70,900	47,150	39,850
Mean	1,249	1,155	1,276	3,673	3,862	2,164	2,494	3,268	3,755	2,287	1,521	1,328
Cfsm	1.94	1.80	1.98	5.71	6.01	3.37	3.88	5.08	5.84	3.56	2.37	2.07
In.	2.24	2.00	2.29	6.59	6.25	3.88	4.33	5.86	6.52	4.10	2.73	2.30
Ac-ft	76,800	68,730	78,490	225,800	214,500	133,100	148,400	200,900	223,400	140,600	93,520	79,040

Calendar year 1952: Max 5,180 Min 1,100 Mean 2,252 Cfsm 3.50 In. 47.67 Ac-ft 1,635,000
Water year 1952-53: Max 16,900 Min 1,100 Mean 2,325 Cfsm 3.62 In. 49.09 Ac-ft 1,683,000

Peak discharge (base, 5,300 cfs).--Jan. 18 (5 p.m.) 20,500 cfs (12.50 ft); Feb. 3 (5:30 p.m.) 9,130 cfs (7.12 ft); Feb. 6 (4:30 p.m.) 10,600 cfs (7.87 ft); May 19 (10 p.m.) 5,880 cfs (5.25 ft); June 7 (8 a.m.) 6,750 cfs (5.77 ft).
* Discharge measurement made on this day.

South Fork Big Butte Creek near Butte Falls, Oreg.

Location.--Lat 42°32', long. 122°33', in SW¼ sec. 11, T. 35 S., R. 2 E., on right bank just downstream from Ginger Creek and 1 mile east of Butte Falls.
Drainage area.--135 sq mi.
Records available.--September 1910 to October 1911, August to October 1915, October 1917 to September 1922, October 1925 to September 1953.
Gage.--Water-stage recorder. Altitude of gage is 2,360 ft (from river-profile map). Sept. 20, 1910, to Sept. 30, 1922, staff gage at site 300 ft upstream at different datum.
Average discharge.--34 years (1910-11, 1917-22, 1925-53), 160 cfs.
Extremes.--Maximum discharge during year, 1,800 cfs Jan. 18 (gage height, 3.49 ft); minimum, 76 cfs Nov. 28 (gage height, 0.62 ft).
1910-11, 1915, 1917-22, 1925-53: Maximum discharge, 2,470 cfs Feb. 20, 1927 (gage height, 4.05 ft), from rating curve extended above 1,600 cfs; minimum, 39 cfs Oct. 14, 1931 (gage height, 0.32 ft).
Revisions.--The figures of maximum discharge for some water years have been revised, as shown in the following table. They supersede figures published in the water-supply papers indicated.

WSP	Water year	Date	Discharge (cfs)	Gage height (feet)
514	1919	Apr. 4, 5, 1919	790	2.8
534	1921	Feb. 21, 1921	1,320	3.5
554	1922	Nov. 30, 1921	790	2.8
694	1929	Apr. 15, 1929	468	1.55

Remarks.--Records fair except those for periods of no gage-height record, which are poor. Diversions for irrigation of about 1,000 acres above station and since 1927 for Medford municipal supply. No regulation.
Revisions.--Revised figures of discharge, in cubic feet per second, for the water years 1911, 1918-19, 1921-22, and 1929, superseding those published in WSP 312, 484, 514, 534, 554, and 694, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
1910		1919-Con.		1921-Con.		1921-Con.	
Nov. 27	716	Apr. 12	540	Jan. 8	600	Feb. 28	540
28	1,210	13	520	9	540	Nov. 30	790
29	865	14	520	10	425		
30	520	15	480	Feb. 4	452	1929	
		16	425	5	480	Apr. 14	300
1918		17	480	9	930	15	451
Jan. 13	1,080	18	540	10	930	16	424
14	540	19	540	11	860	17	388
15	540	20	540	12	720	18	363
18	540	21	480	13	755	19	343
28	220	22	480	14	860	20	333
		23	425	15	790	21	353
1919		24	425	16	630	22	393
Apr. 1	540	25	425	17	630	23	378
2	590	26	425	18	570	24	363
3	650			19	486	25	338
4	790	1921		20	660	26	324
5	790	Jan. 1	600	21	1,160	27	324
6	720	2	755	22	720	28	338
7	540	3	1,080	23	660	29	363
8	470	4	1,000	24	630	30	328
9	425	5	1,160	25	600		
10	540	6	790	26	600		
11	600	7	720	27	540		

Month	Maximum	Minimum	Mean	Runoff in acre-feet
November 1910	1,210	120	263	15,600
Water year 1910-11	1,210	102	234	169,000
January 1918	1,080	100	†344	21,200
Water year 1917-18	1,080	92	†161	116,000
Calendar year 1918	1,080	92	†157	113,000
April 1919	790	370	513	30,500
Water year 1918-19	790	-	174	126,000
Calendar year 1919	790	-	182	132,000
January 1921	1,160	235	457	28,100
February	1,160	269	613	34,000
Water year 1920-21	1,160	93	263	190,000
November 1921	790	124	168	10,000
Calendar year 1921	1,160	120	261	189,000
Water year 1921-22	790	104	183	133,000
April 1929	451	162	278	16,500
Water year 1928-29	451	61	134	97,300
Calendar year 1929	451	61	137	99,100

† Partly estimated.

South Fork Big Butte Creek near Butte Falls, Oreg.--Continued

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.6	72	2.0	695
1.0	172	3.0	1,420
1.5	387		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	87	87	95	117	252	216	273	179	376	149	103	98
2	87	87	100	120	252	209	243	166	339	143	103	98
3	87	85	98	115	433	202	232	160	310	143	105	98
4	87	85	98	112	505	192	220	155	286	138	103	*95
5	87	85	98	107	740	185	216	158	269	135	103	95
6	87	87	103	*107	1,070	182	216	163	320	133	103	95
7	87	89	175	149	970	179	216	169	487	127	100	95
8	87	89	125	175	907	179	213	175	523	125	100	98
9	89	87	112	205	a700	179	198	175	517	125	100	98
10	89	87	192	169	553	188	192	163	451	125	103	91
11	89	89	152	155	a500	188	182	155	410	125	100	93
12	87	95	135	175	a450	192	175	*149	376	117	*100	93
13	87	100	120	202	a400	182	169	*146	355	117	100	95
14	87	100	115	195	a360	179	166	158	305	117	103	93
15	85	98	110	179	a350	172	160	166	277	117	100	91
16	85	91	110	213	a350	185	163	163	264	115	100	91
17	87	89	107	508	366	185	182	158	269	*112	100	93
18	89	*87	*105	1,290	387	192	179	172	252	110	98	91
19	89	87	107	914	345	220	172	310	235	110	95	91
20	89	87	112	*747	*334	232	169	324	209	112	95	91
21	*87	85	110	610	305	228	*172	360	202	112	93	93
22	89	82	115	523	291	247	179	315	192	112	91	93
23	89	82	110	422	277	*256	182	376	185	112	93	98
24	89	82	105	360	260	371	182	439	192	112	93	100
25	89	82	112	315	247	451	182	433	185	112	98	100
26	87	82	110	a260	235	387	185	572	182	107	107	100
27	87	82	110	228	224	345	202	656	172	107	103	100
28	87	82	107	224	224	320	209	584	160	107	100	100
29	87	93	117	216	-	305	195	*499	160	107	103	103
30	87	93	125	224	-	291	188	439	155	107	98	105
31	87	-	117	216	-	296	-	410	-	105	98	-
Total	2,713	2,636	3,607	9,552	12,287	7,335	5,812	8,647	8,615	3,695	3,091	2,875
Mean	87.5	87.9	116	308	439	237	194	279	287	119	99.7	95.8
Ac-ft	5,380	5,230	7,150	18,950	24,370	14,550	11,530	17,150	17,090	7,330	6,130	5,700

Calendar year 1952: Max 1,030 Min 82 Mean 205 Ac-ft 149,200
Water year 1952-53: Max 1,290 Min 82 Mean 194 Ac-ft 140,600

Peak discharge (base, 450 cfs).--Jan. 18 (3:30 p.m.) 1,800 cfs (3.49 ft); Feb. 7 (7 p.m.) 1,180 cfs (2.69 ft); Mar. 24 (5 p.m.) 523 cfs (1.73 ft); May 27 (8 to 9 a.m.) 682 cfs (1.98 ft) June 8 (3 to 6 a.m.) 541 cfs (1.76 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage and records for South Fork Little Butte Creek near Lake Creek.

Big Butte Creek near McLeod, Oreg.

Location.--Lat 42°39'25", long. 122°41'20", in NW¼ sec. 3, T. 34 S., R. 1 E., on right bank 50 ft downstream from bridge on county road, 1 mile upstream from mouth, and 1 mile south of McLeod.

Drainage area.--249 sq mi.

Records available.--October 1945 to September 1953.

Gage.--Staff gage read twice daily. Datum of gage is 1,526.48 ft above mean sea level, datum of 1929, supplementary adjustment of 1947.

Average discharge.--8 years, 332 cfs.

Extremes.--Maximum discharge during year, 6,390 cfs Jan. 18 (gage height, 11.1 ft, observed at peak), from rating curve extended above 2,700 cfs by logarithmic plotting; minimum observed, 78 cfs Sept. 19.
1945-53: Maximum discharge, that of Jan. 18, 1953; minimum observed, 70 cfs Sept. 23, 1947.

Remarks.--Records fair. Slight regulation by fish hatchery 600 ft above station. Several diversions in vicinity of Butte Falls, the two largest being the city of Medford diversion and Eagle Point Irrigation District canal.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
1.4	67	3.0	550	1.7	76	5.0	1,460
1.7	123	4.0	975	2.0	154	7.0	2,620
2.0	198	5.8	1,900	3.0	505	10.0	5,280

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	146	171	247	598	404	521	260	724	223	105	95
2	80	146	193	247	630	394	491	236	634	203	108	95
3	80	146	187	225	1,540	383	441	226	541	194	103	95
4	81	148	184	216	1,310	366	437	216	497	187	103	95
5	81	148	193	210	2,140	355	433	206	465	178	100	90
6	81	148	210	210	2,390	348	418	216	553	169	108	95
7	83	148	630	710	2,200	341	408	230	801	166	95	93
8	80	151	566	795	1,930	334	390	250	752	160	100	93
9	141	151	270	970	1,400	334	372	250	729	154	100	90
10	137	151	1,020	590	1,140	358	338	223	702	148	98	86
11	137	151	418	404	1,040	350	306	210	612	148	95	86
12	134	158	316	562	925	386	292	197	561	137	95	86
13	137	182	250	1,170	810	362	274	190	549	137	95	86
14	137	204	222	777	810	338	264	210	505	137	93	86
15	137	174	216	514	693	334	250	219	453	*134	95	81
16	137	166	210	772	630	366	257	210	429	132	95	83
17	137	161	201	1,900	742	372	285	200	383	126	90	83
18	139	161	198	4,880	792	*390	285	200	372	121	88	81
19	141	161	198	2,260	639	537	268	541	352	126	86	81
20	141	156	241	1,900	581	537	257	*469	324	123	86	81
21	141	158	222	*1,360	561	521	288	565	313	121	86	83
22	139	156	216	1,030	525	585	268	469	299	121	86	83
23	151	156	213	835	493	549	271	1,050	271	118	86	83
24	146	156	*195	724	477	792	268	810	260	118	86	121
25	146	156	201	675	449	930	257	810	247	123	86	154
26	146	156	201	630	429	783	268	*1,510	243	113	132	151
27	146	151	204	489	425	706	306	1,370	230	110	*110	151
28	146	154	190	489	418	648	313	1,120	226	105	100	151
29	146	154	228	473	-	612	288	965	243	108	108	108
30	148	156	348	473	-	569	274	840	230	105	105	110
31	*148	-	257	449	-	533	-	774	-	105	95	-
Total	3,904	4,710	8,569	27,186	26,717	14,822	9,778	15,242	13,500	4,350	3,018	2,956
Mean	126	157	276	877	954	478	326	492	450	140	97.4	98.5
Ac-ft	7,740	9,340	17,000	53,920	52,990	29,400	19,390	30,230	26,780	8,630	5,990	5,860

Calendar year 1952: Max 2,380 **Min** 77 **Mean** 358 **Ac-ft** 259,700
Water year 1952-53: Max 4,880 **Min** 80 **Mean** 369 **Ac-ft** 267,300

* Discharge measurement made on this day.

Elk Creek near Trail, Oreg.

Location.--Lat 42°40', long. 122°45', in SE¼ sec. 30, T. 33 S., R. 1 E., on right bank 0.7 mile upstream from mouth and 3½ miles northeast of Trail.

Drainage area.--133 sq mi.

Records available.--October 1945 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 1,468.70 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to July 5, 1946, staff gages at various sites within half a mile of present site at different datums. July 5, 1946, to June 22, 1950, staff gage at present site and datum.

Average discharge.--8 years, 240 cfs.

Extremes.--Maximum discharge during year, 10,000 cfs Jan. 18 (gage height, 13.32 ft); minimum daily, 1.6 cfs Oct. 9.
1945-53: Maximum discharge, that of Jan. 18, 1953; minimum observed, 0.9 cfs Aug. 29, 1946.

Remarks.--Records good except those for periods of backwater from rock dam and leaves, which are fair, and those for periods of no gage-height record, which are poor. No regulation. Several small diversions above station for irrigation.

Rating tables, water year 1952-53, except periods of backwater from rock dam and leaves (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
0.1	1.0	1.5	135	0.2	7.2	2.0	265
.2	3.0	2.0	250	.4	20	3.0	585
.3	6.0	3.0	580	.6	37	5.0	1,580
.5	15	5.0	1,580	1.0	83	8.0	3,930
.7	29	7.0	3,030	1.5	160	11.0	7,100
1.0	59						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a2.5	5.1	12	242	653	263	272	235	339	a70	22	22
2	a2.3	5.1	28	298	670	231	256	249	282	66	26	21
3	a2.6	5.7	26	298	1,980	203	249	229	242	59	25	20
4	a2.4	5.4	17	242	1,540	181	249	216	218	57	24	19
5	a2.5	5.1	37	212	2,480	170	256	214	203	55	22	19
6	a2.3	5.1	38	186	2,560	160	244	216	399	52	23	19
7	a2.1	5.1	229	664	1,590	153	222	203	876	51	22	19
8	a1.9	5.1	162	1,630	1,460	160	199	185	701	48	21	19
9	a1.6	4.5	75	2,590	985	173	179	187	557	45	20	19
10	a1.7	4.5	932	1,040	714	181	162	171	492	41	19	18
11	a1.9	4.8	*556	683	538	175	146	160	393	37	16	16
12	2.4	5.7	490	1,240	430	179	137	151	345	36	12	16
13	3.9	17	426	1,810	357	171	131	142	305	*33	12	14
14	3.3	29	323	1,260	315	166	124	147	260	34	12	14
15	2.8	24	250	782	282	155	117	142	229	32	16	13
16	2.2	14	200	966	258	164	120	137	207	31	17	12
17	2.4	12	159	2,920	427	*183	142	136	187	26	19	12
18	3.0	12	128	7,120	661	212	160	144	173	26	14	14
19	3.9	11	117	3,070	506	348	162	300	155	26	10	14
20	4.5	10	130	2,440	412	454	185	*402	137	27	11	12
21	4.2	10	130	*1,600	348	412	216	461	124	26	12	14
22	3.6	9.2	139	1,040	310	a700	231	447	114	26	14	10
23	3.9	8.8	141	755	278	a800	227	468	105	26	14	11
24	3.9	8.4	*112	589	254	a1,100	203	585	97	*25	14	11
25	3.6	8.4	96	496	233	a1,000	193	475	94	24	14	12
26	3.9	8	88	447	227	a700	201	796	89	26	39	14
27	3.9	8	95	378	258	a500	249	1,020	83	26	*37	14
28	3.9	7.5	90	369	280	a440	318	886	78	22	26	12
29	4.5	7.5	101	468	-	a380	265	665	a75	22	26	12
30	5.4	8	351	609	-	333	238	503	a70	22	26	13
31	*5.4	-	294	674	-	305	-	399	-	22	23	-
Total	98.4	274.0	5,972	37,120	21,006	10,752	6,053	10,671	7,629	1,119	608	455
Mean	3.17	9.13	193	1,197	750	347	202	344	254	36.1	19.6	15.2
Ac-ft	195	543	11,850	73,630	41,660	21,330	12,010	21,170	15,130	2,220	1,210	902

Calendar year 1952: Max 3,480 **Min** 1.6 **Mean** 240 **Ac-ft** 174,600
Water year 1952-53: Max 7,120 **Min** 1.6 **Mean** 279 **Ac-ft** 201,800

Peak discharge (base, 2,700 cfs).--Jan. 9 (6:30 a.m.) 3,720 cfs (7.77 ft); Jan. 18 (4:30 p.m.) 10,000 cfs (13.32 ft); Feb. 5 (12 p.m.) 3,510 cfs (7.53 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage when available and records for South Umpqua River at Tiller.

Note.--Backwater from rock dam and leaves Oct. 12 to Dec. 10, July 13 to Sept. 30.

Rogue River at Dodge Bridge, near Eagle Point, Oreg.

Location.--Lat 42°31'30", long. 122°50'30", in SE¼ sec. 17, T. 35 S., R. 1 W., on right bank at Dodge Bridge 0.6 mile downstream from Reese Creek, 4½ miles northwest of Eagle Point, and at mile 134.9 (Geological Survey river-profile survey).

Drainage area.--1,210 sq mi, approximately.

Records available.--October 1938 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 1,273.66 ft above mean sea level, datum of 1929. Prior to Dec. 21, 1938, staff gage at same site and datum.

Average discharge.--15 years, 2,566 cfs.

Extremes.--Maximum discharge during year, 44,600 cfs Jan. 18 (gage height, 11.08 ft), from rating curve extended above 17,000 cfs by logarithmic plotting; maximum gage height, 11.20 ft Jan. 18, momentary backwater from debris; minimum discharge, 892 cfs Oct. 6; minimum daily, 1,280 cfs Oct. 5, Nov. 28.
1938-53: Maximum discharge, that of Jan. 18, 1953; maximum gage height, 11.52 ft Dec. 28, 1945; minimum discharge, 611 cfs Aug. 6, 14, 29, Sept. 9, 1940 (gage height, 0.99 ft); minimum daily, 830 cfs Sept. 1, 1940.

Remarks.--Records good. Many small diversions above station for irrigation; most of flow of Big Butte Creek is diverted near Butte Falls. Some diurnal fluctuation caused by powerplant about 30 miles upstream.

Revisions (water years).--WSP 1094: 1942(M), 1943, 1945(M), 1946.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17		Jan. 18 to Sept. 30			
1.4	1,240	1.3	1,300	6.0	14,000
2.0	2,120	2.0	2,260	9.0	30,000
4.0	6,420	3.0	4,120	10.0	36,500
6.0	12,800	4.0	6,620		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,330	1,360	1,340	2,010	4,820	2,980	3,110	3,500	4,750	3,170	1,850	1,590
2	1,290	1,360	1,480	2,160	4,900	2,880	2,980	3,280	4,490	3,110	1,850	1,600
3	1,290	1,360	1,430	2,160	13,300	2,790	2,960	3,090	4,300	3,200	1,800	1,520
4	1,290	1,320	1,380	2,020	12,000	2,690	2,980	3,150	4,030	3,170	1,800	1,530
5	1,280	1,380	1,480	1,980	13,800	2,600	3,070	3,540	3,970	3,110	1,800	1,520
6	1,290	1,360	1,590	1,860	17,100	2,570	3,130	3,940	5,230	3,070	1,850	1,570
7	1,290	1,360	3,190	4,000	13,600	2,550	3,020	4,010	7,860	3,090	1,800	1,550
8	1,290	1,340	*2,480	5,710	12,300	2,570	2,920	3,820	7,230	3,000	1,750	1,520
9	1,360	1,340	1,900	9,070	8,730	2,620	2,760	3,560	6,170	2,810	1,750	1,510
10	1,370	1,360	5,290	5,370	6,990	2,760	2,600	3,220	5,670	2,720	1,700	1,520
11	1,360	1,340	3,350	4,040	6,010	2,790	2,490	*3,090	5,260	2,640	1,700	1,480
12	1,340	1,410	2,900	5,780	5,260	2,810	2,410	3,030	5,140	2,570	1,700	1,470
13	1,340	1,500	2,540	8,090	4,800	2,740	2,360	3,090	4,990	2,540	1,650	1,460
14	1,360	1,590	2,160	6,320	4,490	2,640	2,290	3,190	4,560	2,440	1,650	1,460
15	1,340	1,470	1,940	4,610	4,270	2,550	2,240	3,200	4,520	2,400	1,650	1,460
16	1,330	1,380	1,820	5,230	4,050	2,620	2,290	3,020	4,540	2,300	1,650	1,440
17	1,330	1,370	1,720	10,800	4,380	*2,620	2,490	3,050	4,520	2,230	1,650	1,440
18	1,360	1,370	1,650	33,500	5,280	2,690	2,550	3,300	4,660	2,200	1,600	1,440
19	1,380	1,360	1,640	21,900	4,430	3,440	2,490	5,980	4,470	2,160	1,610	1,430
20	1,380	1,360	1,710	*16,200	3,990	3,480	2,760	6,170	4,050	2,120	1,600	1,430
21	1,360	1,360	1,700	11,300	3,760	3,380	3,170	5,620	3,900	2,070	1,610	1,420
22	1,360	1,320	1,700	7,770	3,580	3,860	3,560	4,990	3,860	2,030	1,590	1,400
23	1,340	1,320	1,660	6,090	3,400	3,920	3,880	5,460	3,840	2,010	1,570	1,440
24	1,360	1,330	1,550	5,160	3,260	4,940	3,720	5,490	3,640	1,970	1,570	1,440
25	1,360	1,320	1,520	4,610	3,150	5,360	3,660	4,850	3,580	1,960	1,590	1,470
26	1,340	1,320	1,540	4,340	3,000	4,450	3,800	7,290	*3,480	1,940	1,960	1,470
27	1,330	1,290	1,570	3,900	3,030	3,970	4,580	6,870	3,420	1,900	1,970	1,480
28	1,330	1,280	1,520	3,680	3,030	3,760	4,990	5,980	3,340	1,890	1,730	1,480
29	1,340	1,290	1,620	3,780	-	3,540	4,210	5,510	3,300	1,850	1,720	*1,460
30	1,330	1,320	2,520	4,080	-	3,360	3,760	5,040	3,260	1,850	1,690	1,440
31	1,340	-	2,090	4,160	-	3,280	-	4,800	-	1,850	1,620	-
Total	41,390	40,840	61,980	211,680	180,710	99,210	93,230	134,130	136,030	75,370	53,030	44,440
Mean	1,335	1,361	1,999	6,828	6,454	3,200	3,108	4,327	4,534	2,431	1,711	1,481
Ac-ft	82,100	81,000	122,900	419,900	358,400	196,800	184,900	266,000	269,800	149,500	105,200	88,150

Calendar year 1952: Max 13,500 Min 1,280 Mean 3,058 Ac-ft 2,220,000
Water year 1952-53: Max 33,500 Min 1,280 Mean 3,211 Ac-ft 2,325,000

Peak discharge (base, 9,000 cfs).--Dec. 10 (11:30 a.m.) 9,580 cfs (5.04 ft); Jan. 9 (8:30 a.m.) 11,200 cfs (5.54 ft); Jan. 13 (6 p.m.) 9,520 cfs (5.02 ft); Jan. 18 (7 p.m.) 44,600 cfs (11.08 ft); Feb. 3 (2:30 p.m.) 16,600 cfs (6.57 ft); Feb. 6 (7:30 a.m.) 18,800 cfs (7.07 ft).
* Discharge measurement made on this day.

South Fork Little Butte Creek near Lake Creek, Oreg.

Location.--Lat 42°24'30", long. 122°36'00", in SE¼ sec. 29, T. 36 S., R. 2 E., on left bank a quarter of a mile upstream from intake of Rogue River Valley Canal and 1½ miles southeast of Lake Creek Post Office.

Drainage area.--138 sq mi.

Records available.--April 1921 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 1,720 ft (by barometer). Prior to June 17, 1921, staff gage at same site and datum.

Average discharge.--32 years, 104 cfs.

Extremes.--Maximum discharge during year, 2,870 cfs Jan. 18 (gage height, 5.89 ft), from rating curve extended above 840 cfs by logarithmic plotting; minimum, 16 cfs occurred sometime during period Nov. 16 to Dec. 21 and on Sept. 26.
1921-53: Maximum discharge, 3,920 cfs Jan. 7, 1948 (gage height, 6.48 ft), from rating curve extended above 840 cfs by logarithmic plotting; minimum, 2 cfs Aug. 10, 1931 (gage height, 0.97 ft).

Remarks.--Records good except those for periods of no gage-height record and those above 1,000 cfs, which are poor. Diversions for irrigation of about 1,000 acres above station.

Revisions (water years).--WSP 934: 1925(M).

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
1.3	18	2.5	385	1.2	14	2.0	200
1.4	27	3.0	645	1.3	24	3.0	680
1.5	40	4.0	1,280	1.5	57	3.6	1,040
1.7	78	4.6	1,740	1.7	101		
2.0	170						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	20	22	28	37	244	101	216	280	416	91	32	28
2	21	22	30	35	232	99	212	249	384	87	32	*27
3	21	22	33	34	493	101	216	228	357	82	30	23
4	22	22	35	32	455	99	224	232	326	79	32	23
5	21	22	35	31	580	96	232	254	316	73	28	27
6	20	22	40	*32	932	99	228	276	411	69	*32	33
7	20	22	100	90	944	99	216	285	830	*63	28	30
8	21	22	70	166	764	110	204	280	585	61	28	28
9	22	22	50	206	505	118	186	280	500	55	28	27
10	22	*22	150	123	402	130	172	244	435	53	27	24
11	22	22	100	99	344	127	165	*220	388	52	26	23
12	22	24	80	132	290	134	151	*208	375	52	24	23
13	22	30	70	265	258	127	151	204	362	50	22	21
14	21	34	55	230	240	118	*148	236	316	48	26	22
15	21	30	50	*174	228	116	151	258	290	46	26	22
16	21	25	45	194	220	121	162	244	272	44	26	26
17	22	23	42	546	*236	116	182	240	249	44	25	23
18	22	22	40	1,720	224	*116	186	244	232	43	22	22
19	23	21	42	1,030	196	158	204	416	212	39	21	21
20	22	20	45	*830	176	162	228	430	196	38	21	22
21	22	20	46	580	158	154	290	460	179	36	24	23
22	22	20	*45	460	148	165	334	388	165	36	23	23
23	22	20	37	375	134	172	362	570	154	34	24	22
24	22	20	31	321	121	262	348	530	144	36	26	22
25	22	20	32	285	113	339	344	485	130	38	26	21
26	22	20	30	254	110	276	357	782	121	36	33	19
27	21	20	31	220	107	258	402	*668	113	36	32	20
28	21	20	30	212	110	258	384	535	107	33	30	27
29	22	20	31	198	-	228	348	500	107	34	39	28
30	22	25	47	196	-	224	316	465	99	34	34	28
31	22	-	42	193	-	228	-	445	-	32	30	-
Total	668	676	1,542	9,298	8,964	4,911	7,319	11,136	8,771	1,554	855	728
Mean	21.5	22.5	49.7	300	320	158	244	359	292	50.1	27.6	24.3
Ac-ft	1,320	1,340	3,060	18,440	17,780	9,740	14,520	22,090	17,400	3,080	1,700	1,440

Calendar year 1952: Max 1,260 Min 20 Mean 156 Ac-ft 112,900
Water year 1952-53: Max 1,720 Min 19 Mean 155 Ac-ft 111,900

Peak discharge (base, 500 cfs).--Jan. 18 (4 p.m.) 2,870 cfs (5.89 ft); Feb. 7 (5 p.m.) 1,730 cfs (4.59 ft); May 26 (1 p.m.) 1,030 cfs (3.59 ft); June 7 (7 a.m.) 1,040 cfs (3.60 ft).
* Discharge measurement made on this day.
Note.--No gage-height record Nov. 16 to Dec. 21; discharge estimated on basis of recorded range in stage, weather records, and records for South Fork Big Butte Creek near Butte Falls.

North Fork Little Butte Creek at Fish Lake, near Lake Creek, Oreg.

Location.--Lat 42°23', long. 122°21', in SE¼ sec. 4, T. 37 S., R. 4 E., on right bank half a mile downstream from outlet of Fish Lake and 14 miles east of Lake Creek Post Office.

Drainage area.--18 sq mi, approximately.

Records available.--October 1914 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 4,571.41 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Oct. 21, 1914, to July 20, 1915, staff gage just above wasteway in temporary dam at different datum. July 11, 1916, to July 9, 1918, staff gage and July 10, 1918, to Oct. 28, 1932, water-stage recorder, at site a quarter of a mile upstream at different datums.

Average discharge.--37 years (1916-53), 34.9 cfs.

Extremes.--Maximum discharge during year, 141 cfs June 10; minimum, 18 cfs Oct. 12.
1914-53: Maximum discharge, about 940 cfs June 5, 1917, computed from rate of change in contents of reservoir after break in dam (occurred during period of no gage-height record); no flow at times.

Remarks.--Records fair. Flow regulated by Fish Lake. Since September 1923, water has been diverted by Cascade Canal from Fourmile Lake, in Klamath River basin, into Fish Lake basin. No diversion from creek above station.

Revisions (water years).--WSP 654: Drainage area. WSP 1218: 1917(M).

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	*22	24	27	32	33	34	41	67	85	113	53
2	72	22	24	27	31	34	34	42	66	85	117	53
3	72	21	24	27	32	33	34	42	67	83	*124	*63
4	72	21	24	27	31	33	34	44	67	81	113	64
5	67	21	24	28	32	33	34	44	61	86	106	75
6	61	22	25	27	32	33	34	45	63	100	102	67
7	56	22	25	28	32	32	34	45	106	94	102	38
8	56	22	25	27	33	32	34	45	139	100	106	41
9	54	22	25	28	33	32	34	45	141	100	113	52
10	57	22	25	28	33	32	34	46	119	100	117	52
11	30	22	25	28	33	32	35	45	88	109	115	52
12	18	22	25	28	33	32	35	46	77	113	115	52
13	19	22	25	28	33	32	35	47	77	119	113	52
14	19	23	25	28	33	32	36	47	75	119	111	52
15	19	23	25	28	33	32	36	56	69	109	115	52
16	19	23	25	29	33	32	36	61	61	109	119	52
17	*19	23	25	32	33	32	36	57	*58	111	115	52
18	19	23	26	32	33	32	35	56	57	121	106	51
19	20	23	26	32	33	32	36	58	63	124	104	51
20	20	23	26	32	33	32	36	56	83	128	102	51
21	20	23	27	32	33	32	38	57	83	128	102	51
22	20	23	27	32	33	33	38	64	83	*124	100	51
23	20	23	27	32	33	33	39	74	83	121	96	51
24	20	23	2	32	33	33	40	83	83	119	90	52
25	20	23	2	31	33	34	40	85	85	126	81	52
26	21	23	27	31	33	34	40	77	83	126	60	42
27	20	23	27	31	33	34	41	75	81	119	53	42
28	21	23	27	31	33	34	42	81	81	115	58	42
29	21	23	27	31	-	34	42	81	83	115	40	29
30	21	24	27	32	-	34	41	77	83	121	36	20
31	22	-	27	31	-	34	-	69	-	117	41	-
Total	1,069	675	795	917	915	1,016	1,097	1,793	2,432	3,407	2,985	1,507
Mean	34.5	22.5	25.6	29.6	32.7	32.8	36.6	57.8	81.1	110	96.3	50.2
Ac-ft	2,120	1,340	1,580	1,820	1,810	2,020	2,180	3,560	4,820	6,760	5,920	2,990

Calendar year 1952: Max 121 **Min** 18 **Mean** 49.4 **Ac-ft** 35,850
Water year 1952-53: Max 141 **Min** 18 **Mean** 51.0 **Ac-ft** 36,920

* Discharge measurement made on this day.

North Fork Little Butte Creek near Lake Creek, Oreg.

Location.--Lat 42°24'10", long. 122°32'20", in SW¼ sec. 25, T. 36 S., R. 2 E., on right bank a quarter of a mile upstream from Hanley South Canal diversion and 4½ miles east of Lake Creek Post Office.

Drainage area.--38 sq mi, approximately.

Records available.--September 1911 to March 1913, May 1922 to September 1928 (incomplete), and October 1931 to September 1953 in reports of Geological Survey. September 1911 to March 1913 and May 1922 to September 1941 in reports of State engineer.

Gage.--Water-stage recorder. Datum of gage is 2,125.01 ft above mean sea level, datum of 1929. Sept. 10, 1911, to Mar. 31, 1913, staff gages near present site at different datums.

Average discharge.--27 years (1911-12, 1922-23, 1928-53), 71.1 cfs.

Extremes.--Maximum discharge during year, 600 cfs Feb. 7 (gage height, 2.97 ft), from rating curve extended above 200 cfs; minimum, 42 cfs Oct. 12-18 (gage height, 1.74 ft). 1911-13, 1922-28, 1931-53: Maximum discharge, 680 cfs Dec. 30, 1924 (gage height, 3.30 ft), from rating curve extended above 170 cfs; minimum, 11 cfs Oct. 29 to Nov. 8, 1931 (computed on basis of records for station at Fish Lake, near Lake Creek).

Remarks.--Records fair. Flow regulated by Fish Lake. Diversions for irrigation of about 100 acres above station; some water diverted into Fish Lake from Fourmile Lake, in Klamath River basin, since September 1923.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 18				Jan. 19 to Sept. 30			
1.7	37	2.2	140	1.8	39	2.4	180
1.8	50	2.4	222	2.0	66	2.7	360
2.0	86	2.7	405	2.2	110		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	98	45	49	52	84	78	86	80	148	103	156	82
2	100	45	49	52	80	78	82	78	140	103	152	*78
3	100	45	49	50	129	78	80	78	134	103	164	91
4	100	45	47	50	103	76	80	80	131	100	152	98
5	96	45	49	50	172	76	78	82	*125	100	140	110
6	93	45	52	*50	205	74	78	84	144	122	140	119
7	*82	45	61	56	238	74	78	86	346	110	140	72
8	84	45	53	66	185	74	78	88	318	122	144	72
9	80	46	52	76	137	76	76	91	284	122	144	88
10	84	*46	66	60	122	78	76	86	236	113	152	84
11	64	46	55	56	108	76	74	*84	176	125	*152	84
12	42	47	53	60	100	78	72	*84	164	131	152	84
13	42	47	50	70	96	76	72	84	152	134	156	84
14	42	50	50	66	96	74	*70	91	137	137	160	84
15	42	47	50	61	93	72	68	98	131	*125	168	84
16	42	46	50	72	93	74	70	108	116	125	180	86
17	42	46	50	178	*98	74	74	103	108	125	176	86
18	44	46	49	377	98	*72	72	100	105	134	168	86
19	44	46	50	152	93	82	72	156	105	134	164	86
20	44	46	53	125	91	84	72	134	128	137	164	86
21	44	46	52	103	88	84	76	144	125	137	160	86
22	44	46	*56	93	86	88	78	131	122	137	152	86
23	44	46	53	86	82	88	80	185	122	137	140	84
24	44	46	52	82	82	108	80	176	119	137	134	82
25	45	46	50	80	80	125	82	180	119	140	128	82
26	45	46	50	78	80	108	82	260	113	148	110	82
27	45	46	52	76	78	103	91	225	108	148	84	74
28	45	46	50	78	80	105	88	205	108	148	93	76
29	45	46	52	76	-	98	86	190	108	152	84	80
30	45	47	*55	76	-	93	86	168	105	160	66	49
31	45	-	52	78	-	91	-	156	-	160	66	-
Total	1,856	1,380	1,611	2,685	3,077	2,615	2,337	3,895	4,477	4,009	4,341	2,503
Mean	59.9	46.0	52.0	86.6	110	84.4	77.9	126	149	129	140	83.4
Ac-ft	3,680	2,740	3,200	5,330	6,100	5,190	4,640	7,730	8,880	7,950	8,610	4,960

Calendar year 1952: Max 341 Min 42 Mean 94.1 Ac-ft 68,310
Water year 1952-53: Max 377 Min 42 Mean 95.3 Ac-ft 69,010

* Discharge measurement made on this day.

Diversions from Little Butte Creek near Lake Creek, Oreg.

The following canals divert water from Little Butte Creek and its tributaries near Lake Creek Post Office:

Hanley South and Hanley North Canals, from North Fork in SE¼ sec. 26, T. 36 S., R. 2 E. Water used for irrigation of land on both sides of Little Butte Creek near Lake Creek.

Rogue River Valley Canal, from South Fork in SE¼ sec. 29, T. 36 S., R. 2 E., and from North Fork in NE¼ sec. 20, T. 36 S., R. 2 E. Water used for irrigation of about 15,000 acres of land, chiefly in Bear Creek basin, on both sides of that creek below Phoenix.

Eagle Point Canal, from main stream in SE¼ sec. 31, T. 35 S., R. 1 E. Water used for irrigation of lands near Eagle Point.

Records for Hanley North and South Canals and Eagle Point Canal are partly estimated.

Records for these canals, published as a group, are available from April 1929 to September 1953; records of some of the canals published separately prior to 1929.

Many smaller canals divert from Little Butte Creek and its tributaries.

Diversions, in acre-feet, water year October 1952 to September 1953

Month	Hanley South Canal a/	Hanley North Canal b/	Rogue River Valley Canal below junction of intakes c/	Eagle Point Canal d/
October	-	-	1,790	-
November	-	-	0	-
December	-	-	0	-
January	-	-	0	-
February	-	-	0	-
March	-	-	0	-
April	-	-	2,860	-
May	-	-	4,460	-
June	-	-	3,410	-
July	-	-	8,900	-
August	350	572	8,290	966
September	344	-	4,870	934
Water year 1952-53	-	-	34,580	-

a/ Canal gates closed sometime after Oct. 7, continuous diversions began June 21, but water noted in canal during May; daily discharge records Oct. 1-4, July 8 to Sept. 30 in files of State engineer.

b/ Canal gates closed sometime after Oct. 7, continuous diversions began June 26, but water noted in canal during May; daily discharge records Oct. 1-7, July 8 to Sept. 28 in files of State engineer.

c/ Canal gates closed Oct. 11, diversions began Apr. 11; daily discharge records for entire year in files of State engineer.

d/ Canal gates closed sometime after Nov. 2, diversions began Apr. 24; daily discharge records Oct. 1-4, July 8 to Sept. 30 in files of State engineer.

Emigrant Creek near Ashland, Oreg.

Location.--Lat 42°09'50", long. 122°36'20", in NE¼ sec. 20, T. 39 S., R. 2 E., on right bank 1,100 ft downstream from Emigrant Gap Reservoir Dam and 6 miles southeast of Ashland.

Drainage area.--64.3 sq mi.

Records available.--January 1920 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 2,053.73 ft above mean sea level, datum of 1929 (levels by Bureau of Reclamation). Prior to Oct. 1, 1926, water-stage recorders or staff gage at sites within 800 ft of present site at different datums.

Average discharge.--14 years (1924-28, 1929-30, 1933-35, 1940-47), 20.1 cfs.

Extremes.--Maximum discharge during year, 2,570 cfs Jan. 18 (gage height, 7.4 ft, from high-water mark); no flow at times.
1920-53: Maximum discharge, 5,260 cfs Feb. 20, 1927, by computation of peak flow over dam; no flow at times.

Remarks.--Records fair except those for periods of no gage-height record and those below 3.0 cfs, which are poor. Flow regulated since December 1924 by Emigrant Gap Reservoir. Diversion above station for irrigation; principal canals are Ashland lateral and East lateral. Water diverted by Keene Creek Canal from Klamath River basin into Emigrant Creek above station.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Jan. 14; backwater from debris May 3-20)

0.0	0	1.5	58
.1	.3	2.0	120
.3	1.5	2.5	200
.5	4.0	3.0	310
.7	9	4.0	630
1.0	20	5.0	1,060
1.3	39		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0		-	0.2	69	66	73	20	96	1.2	42	4.8
2	0		-	.2	71	66	79	14	81	1.1	42	4.8
3	-		-	.2	97	66	70	7.2	70	1.1	42	4.8
4	-		-	.2	154	66	73	2.2	59	1.1	42	6.9
5	-		-	.2	162	66	76	.9	53	1.1	39	*16
6	-		-	.2	224	66	81	.9	66	1.1	38	19
7	-		-	*.2	321	66	72	.3	85	2.4	38	15
8	-		-	.1	325	66	67	**.3	*89	9.3	38	12
9	0		-	.1	188	*66	a60	.4	82	*16	37	12
10	-		-	.1	147	66	a55	.6	*66	52	*37	10
11	-		-	.1	124	65	a50	.4	54	48	37	10
12	-		**0.4	.2	108	65	a46	.4	50	44	37	10
13	-		.4	.3	98	65	a42	.5	51	42	37	10
14	-		.4	48	91	65	a38	.5	44	44	37	a10
15	-		.3	79	88	65	a35	.4	34	44	37	a9.5
16	-		.3	78	84	65	a38	.4	12	43	26	a9
17	-		.3	95	84	65	a40	.4	2.4	44	13	8.4
18	-		.3	992	88	65	a40	.4	1.2	44	37	8.4
19	-		.3	594	*85	93	a40	.4	1.2	44	37	8.4
20	-		.3	574	78	110	*41	5.5	1.2	44	37	8.4
21	-		.3	318	73	90	48	29	1.2	44	34	8.1
22	-		.3	212	70	88	53	37	1.2	44	33	7.2
23	-		.4	168	66	105	56	82	1.2	44	33	6.3
24	-		.4	130	66	136	47	102	1.2	44	33	6.0
25	-		.3	116	66	152	37	71	1.2	44	29	15
26	-		.3	101	66	120	35	82	1.2	44	19	24
27	-		.3	88	66	100	37	138	1.2	44	13	22
28	-		.3	81	66	97	33	130	1.2	44	7.8	7.1
29	-		.4	77	-	90	26	112	1.2	44	6.3	.5
30	0		.3	72	-	78	25	101	1.2	44	4.8	a.5
31	-		.3	69	-	78	-	96	-	44	4.8	-
Total	-		-	3,894.3	3,225	2,517	1,513	1,036.1	990.0	1,011.4	947.7	294.1
Mean	-		-	126	115	81.2	50.4	33.4	33.0	32.6	30.6	9.80
Ac-ft	-		-	7,720	6,400	4,990	3,000	2,060	1,960	2,010	1,880	583

Calendar year	: Max	Min	Mean	Ac-ft
Water year	: Max	Min	Mean	Ac-ft

* Discharge measurement made on this day.
** Field estimate made on this day.
a No gage-height record; discharge estimated on basis of records for Bear Creek at Medford.
Note.--Probably no flow most of time Oct. 3-8, 10-29, Nov. 1 to Dec. 11.

Wagner Creek near Talent, Oreg.

Location.--Lat 42°11'40", long. 122°46'40", in NE¼ sec. 11, T. 39 S., R. 1 W., on left bank half a mile upstream from upper intake of West and Fredericks laterals of Talent Irrigation District and 3 miles south of Talent.

Drainage area.--13.6 sq mi.

Records available.--April 1951 to September 1953 (irrigation seasons only), discontinued. July to October 1913 at site 3,000 ft downstream, published as "near Talent"; records not equivalent due to diversion and inflow.

Gage.--Water-stage recorder and Cippoletti weir. Altitude of gage is 2,200 ft (by barometer). April 1951 to September 1952 staff gage and Cippoletti weir at present site and datum.

Extremes.--Maximum discharge during period, 56 cfs May 26 (gage height, 1.74 ft); minimum, 3.5 cfs Sept. 26, 27, 28.
1951-53: Maximum discharge, that of May 26, 1953; minimum observed, 0.1 cfs for several days in August and September 1951.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Since April 1923, McDonald Creek Canal has discharged water to head of Wagner Creek (above station) from the Applegate River basin.

Rating table, Apr. 1 to Sept. 30, 1953 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 24 to May 21; backwater from debris June 9-13)

0.4	3.5	1.4	30
.7	9.2	1.6	42
1.0	16.7	1.8	63

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							10	12	29	28	12	6.5
2							9.9	12	26	27	12	6.3
3							9.4	12	*24	26	12	5.8
4							9.2	15	22	26	11	5.2
5							9.0	23	22	24	11	5.8
6							8.8	24	25	*24	11	5.8
7							*8.6	15	27	26	10	5.2
8							8.4	14	20	24	10	5.4
9							7.9	15	25	26	a10	5.4
10							7.7	22	23	24	a9.5	5.2
11							7.5	21	21	23	a9	5.0
12							7.3	21	21	27	a9	4.7
13							7.1	21	20	26	a8.5	4.5
14							6.7	29	a18	24	a8	4.4
15							6.9	25	17	24	a7.5	4.2
16							8.6	30	16	24	7.1	*3.7
17							9.4	33	15	22	6.9	3.8
18							8.8	25	15	21	6.9	3.8
19							9.9	29	14	20	6.7	3.8
20							11	34	15	19	6.9	3.8
21							a11	35	15	18	6.7	4.0
22							a17	a30	16	17	6.7	4.7
23							a25	a46	18	17	6.7	4.5
24							23	a42	21	16	6.7	4.0
25							*23	a40	28	15	6.7	3.8
26							20	*53	28	14	8.8	3.7
27							16	*46	26	14	7.5	3.7
28							12	45	26	14	7.3	4.9
29							13	38	26	13	9.0	4.9
30							12	30	28	12	7.5	4.5
31							-	30	-	12	6.7	-
Total							344.1	867	647	647	265.3	141.0
Mean							11.5	28.0	21.6	20.9	8.56	4.70
Ac-ft							683	1,720	1,280	1,280	526	280

Calendar year	: Max	Min	Mean	Ac-ft		
Water year	: Max	Min	Mean	Ac-ft		

* Discharge measurement made on this day.
a No gage-height record; discharge estimated on basis of recorded range in stage when available, weather records, and records for McDonald Creek Canal (not published by Geological Survey).

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Bear Creek at Medford, Oreg.

Location.--Lat 42°19'40", long. 122°52'00", in NW¼ sec. 30, T. 37 S., R. 1 W., on left bank just upstream from Main Street Bridge in Medford.

Drainage area.--279 sq mi.

Records available.--March 1915 to September 1953 (incomplete prior to April 1927).

Gage.--Water-stage recorder and concrete control. Datum of gage is 1,343.47 ft above mean sea level, datum of 1929. Mar. 13, 1915, to June 30, 1918, staff gage and Sept. 20, 1918, to Oct. 19, 1943, water-stage recorder, at site 40 ft upstream at datum 0.42 ft higher. Oct. 20, 1943, to Dec. 30, 1947, water-stage recorder at site 40 ft upstream at present datum.

Average discharge.--32 years (1920-26, 1927-53), 88.6 cfs.

Extremes.--Maximum discharge during year, 4,940 cfs Jan. 18 (gage height, 5.47 ft), from rating curve extended above 3,000 cfs by logarithmic plotting; minimum, 12 cfs Oct. 31. 1915-53: Maximum discharge, 10,200 cfs Feb. 20, 1927 (gage height, 10.57 ft, present datum, site then in use), from rating curve extended above 1,600 cfs; practically no flow at times.

Remarks.--Records good except those below 15 cfs, which are fair. Diversions above station for irrigation. Flow partly regulated since December 1924 ty Emigrant Gap Reservoir.

Revisions (water years).--WSP 1044: 1944.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.2	8	1.5	335
.3	16	2.0	600
.5	38	2.5	965
.7	72	3.0	1,430
1.0	148	4.0	2,600

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	13	30	50	243	198	236	145	410	86	27	38
2	23	13	34	48	226	187	222	137	353	66	30	36
3	25	14	31	48	442	184	215	126	299	55	28	34
4	27	14	27	48	450	187	212	115	262	50	26	*27
5	25	16	32	48	558	184	215	102	274	52	27	32
6	23	17	50	48	719	180	215	98	322	44	34	59
7	22	*17	190	190	1,140	174	204	95	465	31	31	55
8	22	18	126	353	1,130	180	198	*108	376	24	28	44
9	36	19	66	*498	621	180	190	128	395	26	27	37
10	38	19	217	250	486	177	180	118	330	31	25	36
11	38	18	126	201	420	126	167	112	286	37	21	34
12	36	21	86	270	380	123	158	95	274	38	22	38
13	27	27	72	430	340	118	148	84	326	36	21	38
14	26	41	62	366	326	112	142	128	246	28	21	36
15	25	37	55	304	317	110	134	145	229	24	22	30
16	25	30	53	322	294	126	137	140	*240	24	26	26
17	24	26	50	664	330	*158	154	137	215	25	28	28
18	22	25	47	2,590	344	167	158	134	*208	24	*28	30
19	19	26	46	1,860	286	243	151	187	190	25	25	27
20	17	26	74	1,480	246	270	*151	194	177	25	22	25
21	*17	26	57	941	232	243	164	204	154	*26	20	30
22	18	26	*55	649	222	254	167	226	131	28	20	33
23	19	25	52	516	208	282	190	400	120	25	23	34
24	19	24	46	430	*201	353	167	430	115	25	28	33
25	19	24	42	380	190	440	158	344	102	28	31	36
26	19	24	41	348	187	348	167	919	88	28	48	48
27	23	24	50	312	187	299	194	818	88	31	57	50
28	18	24	46	294	198	282	201	594	90	31	50	64
29	15	24	44	274	-	274	174	498	102	24	52	61
30	14	23	59	266	-	258	158	430	105	24	52	59
31	13	-	57	243	-	250	-	410	-	26	41	-
Total	721	681	2,023	14,721	10,923	6,667	5,327	7,801	6,972	1,047	941	1,158
Mean	23.3	22.7	65.3	475	390	215	178	252	232	33.8	30.4	38.6
Ac-ft	1,430	1,350	4,010	29,200	21,670	13,220	10,570	15,470	13,830	2,080	1,870	2,300

Calendar year 1952: Max 1,780 Min 13 Mean 158 Ac-ft 114,900
Water year 1952-53: Max 2,590 Min 13 Mean 162 Ac-ft 117,000

Peak discharge (base, 400 cfs).--Dec. 10 (4 p.m.) 486 cfs (1.84 ft); Jan. 9 (10 a.m.) 733 cfs (2.19 ft); Jan. 13 (7 to 8 p.m.) 684 cfs (2.12 ft); Jan. 18 (10 p.m.) 4,940 cfs (5.47 ft); Feb. 3 (4 to 5 p.m.) 719 cfs (2.17 ft); Feb. 7 (8 p.m.) 2,610 cfs (4.01 ft); Mar. 25 (5 to 7 a.m.) 480 cfs (1.80 ft); May 26 (4 p.m.) 1,630 cfs (3.20 ft); June 7 (6 to 11 a.m.) 522 cfs (1.87 ft).
* Discharge measurement made on this day.

Diversions in Bear Creek basin, Oreg.

The following canals divert from streams in Bear Creek basin:

Ashland lateral of Talent Irrigation District, from Sampson Creek in SE¼ sec. 27, T. 39 S., R. 2 E. Water used to irrigate lands near Ashland. Most of flow is received from Keene Creek, in Klamath River basin, through Keene Creek Canal.

East lateral of Talent Irrigation District, from Emigrant Gap Reservoir in SE¼ sec. 20, T. 39 S., R. 2 E. Water used to irrigate lands mostly on east side of Bear Creek above Medford.

Talent lateral of Talent Irrigation District, from Bear Creek in SW¼ sec. 33, T. 38 S., R. 1 E. Water used to irrigate lands near Talent.

Phoenix Canal, from Bear Creek in NW¼ sec. 23, T. 38 S., R. 1 W. Water supplements flow of Medford Irrigation District Canal, used to irrigate lands west of Bear Creek.

Bear Creek Canal, from Bear Creek at Medford. Water used to irrigate lands west of Bear Creek near Central Point.

Records of these canals, published as a group are available from April 1929 to September 1953; records for some of the canals published separately prior to 1929.

Many smaller canals also divert from Bear Creek and its tributaries.

Diversion, in acre-feet, water year October 1952 to September 1953

Month	Ashland lateral	East lateral	Talent lateral	Phoenix Canal	Bear Creek Canal
October	11	0	0	0.6	276
November	0	0	0	0	0
December	0	0	0	0	0
January	0	0	0	0	0
February	0	0	0	0	0
March	0	0	0	0	0
April	19	1,150	640	74	424
May	111	2,080	1,370	431	702
June	86	1,410	615	595	678
July	627	3,930	2,710	2,720	928
August	926	3,580	2,420	1,890	591
September	478	1,710	1,150	1,030	706
Water year 1952-53	2,260	13,860	8,900	6,740	4,300

Rogue River at Raygold, near Central Point, Oreg.

Location.--Lat 42°26'20, long. 122°59'10", in sec. 18, T. 36 S., R. 2 W., on right bank at Raygold, just downstream from dam and powerhouse of The California Oregon Power Co., half a mile downstream from Bear Creek, 6 miles northwest of Central Point, and at mile 121.9 (Geological Survey river-profile survey).

Drainage area.--2,020 sq mi, approximately.

Records available.--August 1905 to September 1953. Prior to 1922, published as Rogue River near Tolo.

Gage.--Water-stage recorder. Datum of gage is 1,121.78 ft above mean sea level, datum of 1929. Prior to Sept. 19, 1914, staff gage at same site and datum.

Average discharge.--48 years, 2,836 cfs.

Extremes.--Maximum discharge during year, 56,500 cfs Jan. 18 (gage height, 17.83 ft); minimum, 950 cfs Nov. 6 (gage height, 0.55 ft); minimum daily, 1,470 cfs Nov. 25.
1905-53: Maximum discharge, 91,500 cfs Feb. 21, 1927 (gage height, 24.8 ft, from floodmark), from rating curve extended above 36,000 cfs; minimum not determined; minimum daily, 616 cfs Sept. 6, 1931.
Greatest flood known occurred during winter of 1861-62 and reached a stage of about 32 ft; flood of February 1890 reached a stage of about 27½ ft. (Information furnished by Corps of Engineers.)

Remarks.--Records excellent. Many diversions above station for irrigation. Diurnal fluctuation caused by powerplant just above station.

Revisions (water years).--WSP 1248: 1906, 1910(M), 1914(M), 1915.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

1.1	1,430	7.0	13,300
2.0	2,460	15.0	43,500
4.0	5,900		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,480	1,510	1,560	2,460	5,960	3,640	4,000	4,280	6,320	3,540	1,920	1,750
2	1,480	1,510	1,700	2,560	5,880	3,510	3,830	3,970	5,940	3,460	1,890	1,760
3	1,480	1,520	1,730	2,580	15,700	3,410	3,780	3,740	5,550	3,470	1,920	1,680
4	*1,500	1,490	*1,630	2,420	15,000	3,300	3,800	3,710	5,210	3,460	1,880	1,640
5	1,510	1,510	1,720	2,330	15,900	3,190	3,850	4,050	5,050	3,410	1,840	1,660
6	1,500	1,520	2,020	2,250	21,100	3,140	3,920	4,440	6,470	3,350	1,890	1,880
7	1,500	1,530	4,310	4,700	16,900	3,110	3,810	4,550	10,000	3,330	1,840	1,800
8	1,500	1,500	3,930	8,470	17,500	3,120	3,690	4,420	9,470	3,250	1,770	1,720
9	1,550	1,510	2,620	11,900	11,000	3,200	3,470	4,260	8,130	3,040	1,760	1,670
10	1,550	1,510	7,410	7,430	8,770	3,360	3,330	3,880	7,370	2,900	1,740	1,700
11	1,570	1,520	5,000	5,130	7,480	3,380	3,160	*3,680	6,700	2,840	1,720	1,640
12	1,570	1,570	3,680	7,060	6,610	*3,330	3,040	3,520	6,420	2,790	1,670	1,640
13	1,550	1,700	3,170	11,200	5,980	3,270	2,960	3,490	6,450	2,720	1,650	1,630
14	1,530	1,870	2,700	9,220	5,570	3,110	2,870	3,730	5,820	2,670	1,660	1,590
15	1,520	1,750	2,450	6,190	5,450	3,000	2,790	3,860	5,590	2,560	1,710	1,580
16	1,520	1,620	2,250	6,430	5,170	3,040	2,810	3,710	5,490	2,470	1,710	1,550
17	1,510	1,570	2,130	14,700	5,450	3,170	3,080	3,710	5,410	2,410	1,700	1,540
18	1,540	1,540	2,030	43,100	6,890	3,170	3,190	3,680	5,490	2,340	1,660	1,550
19	1,540	1,550	1,980	32,300	5,650	4,570	3,140	6,910	5,250	2,300	*1,650	1,530
20	1,540	1,550	2,240	20,600	5,050	4,640	3,430	7,740	4,820	2,290	1,640	1,530
21	1,550	1,530	2,190	14,500	4,660	4,460	3,830	7,100	4,580	2,230	1,650	1,530
22	1,530	1,530	2,190	9,770	4,390	4,820	4,300	6,380	4,460	2,190	1,630	1,550
23	1,530	1,510	2,120	7,720	4,150	4,920	4,690	7,570	4,370	2,140	1,610	1,570
24	1,540	1,500	1,950	6,550	3,920	6,090	4,550	8,130	4,190	2,120	1,630	1,560
25	1,530	1,470	1,900	5,820	3,780	7,410	4,440	6,720	4,030	2,090	1,650	1,600
26	1,520	1,490	1,890	5,490	3,680	5,920	4,550	13,000	*3,920	2,070	2,020	1,580
27	1,510	1,490	1,930	4,920	3,660	5,210	5,350	11,100	3,830	2,040	2,260	1,580
28	1,530	1,480	1,930	4,580	3,680	4,880	6,090	8,570	3,740	2,010	1,920	1,610
29	1,530	1,490	1,940	4,620	-	4,620	5,190	7,540	3,760	1,960	1,920	*1,630
30	1,520	1,510	2,920	4,940	-	4,310	4,660	6,840	3,680	1,930	1,920	1,620
31	1,530	-	2,760	5,000	-	4,210	-	6,380	-	1,930	1,830	-
Total	47,260	46,350	79,980	276,940	224,930	124,510	115,600	174,860	167,510	81,310	55,260	48,870
Mean	1,525	1,545	2,580	8,934	8,033	4,016	3,853	5,641	5,584	2,623	1,783	1,629
Ac-ft	93,740	91,930	158,600	549,300	446,100	247,000	229,300	346,800	332,300	161,300	109,600	96,930

Calendar year 1952: Max 22,000 Min 1,470 Mean 3,768 Ac-ft 2,736,000
Water year 1952-53: Max 43,100 Min 1,470 Mean 3,954 Ac-ft 2,863,000

Peak discharge (base, 11,000 cfs).--Dec. 10 (4 p.m.) 14,000 cfs (7.25 ft); Jan. 9 (12:30 p.m.) 14,600 cfs (7.43 ft); Jan. 13 (8:30 p.m.) 15,300 cfs (7.66 ft); Jan. 18 (8:30 p.m.) 56,500 cfs (17.83 ft); Feb. 3 (6 p.m.) 23,300 cfs (9.95 ft); Feb. 7 (11:30 p.m.) 25,500 cfs (10.54 ft); May 26 (6 p.m.) 18,200 cfs (8.51 ft); June 7 (1 p.m.) 11,100 cfs (6.25 ft).
* Discharge measurement made on this day.

Rogue River at Grants Pass, Oreg.

Location.--Lat 42°25'50", long. 123°19'00", in NW¼ sec. 20, T. 36 S., R. 5 W., on right bank at city of Grants Pass filter plant, 0.6 mile upstream from U. S. Highway 99 bridge at Grants Pass and at mile 98.0 (Geological Survey river-profile survey).

Drainage area.--2,420 sq mi, approximately.

Records available.--January 1939 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 888.28 ft above mean sea level, datum of 1929.

Average discharge.--14 years, 3,340 cfs.

Extremes.--Maximum discharge during year, 77,000 cfs Jan. 18 (gage height, 23.90 ft), from rating curve extended above 28,000 cfs on basis of slope-area determination at gage height 21.25 ft; minimum, 922 cfs Oct. 29; minimum daily, 1,310 cfs Oct. 5, 7, 8.
1939-53: Maximum discharge, that of Jan. 18, 1953; minimum, 560 cfs Aug. 8, 1940; minimum daily, 637 cfs Aug. 8, 1940.
Flood in winter of 1861-62 reached a stage of about 39 ft (information furnished by Corps of Engineers). Flood in February 1890 reached a stage of about 32 ft, and that of Feb. 21, 1927, about 28 ft, according to local resident.

Remarks.--Records good. Many diversions from Rogue River and tributaries above station, the largest of which are at Savage Rapids Dam of Grants Pass Irrigation District, 5 miles above station. Flow regulated by dams at Savage Rapids and Raygold and slightly by Fish Lake and Emigrant Gap Reservoir. Records of chemical analyses and water temperatures for the water year 1953 are given in WSP 1293.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17		Jan. 18 to Sept. 30			
0.4	1,230	0.3	1,360	7.0	14,700
1.0	1,940	1.0	2,190	17.0	48,000
4.0	7,100	3.0	5,450	20.0	60,000
9.0	19,400				

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,320	1,530	1,630	2,920	6,680	4,100	4,310	4,370	6,660	3,250	1,660	1,740
2	1,340	1,550	1,800	2,910	6,720	3,920	4,130	4,040	6,240	3,120	1,650	1,680
3	1,320	1,550	1,860	2,940	18,000	3,770	4,020	3,800	5,760	3,080	1,660	1,650
4	1,320	1,550	1,750	2,750	18,500	3,610	3,990	3,580	5,360	3,120	1,680	1,570
5	1,310	1,550	1,980	2,580	18,200	3,500	4,010	3,770	5,130	3,070	1,630	1,520
6	1,330	1,530	2,310	2,450	22,900	3,440	4,110	*4,200	6,280	2,970	1,650	1,780
7	1,310	1,520	5,460	4,790	18,900	3,370	4,040	4,350	10,100	2,970	1,680	1,770
8	1,310	1,750	5,390	11,700	21,200	3,360	3,870	4,290	10,000	2,880	1,600	1,630
9	1,330	1,520	3,310	16,500	13,700	3,440	3,650	4,170	8,470	2,730	1,590	1,570
10	1,370	1,560	9,510	9,930	10,800	3,570	3,470	3,800	7,680	2,590	1,570	1,590
11	1,370	1,530	7,210	6,500	8,930	3,630	3,310	3,490	6,920	2,490	1,550	1,560
12	1,400	1,590	4,540	8,570	7,790	3,610	3,190	3,340	6,560	2,480	1,520	1,520
13	1,370	1,740	3,870	13,800	6,940	3,550	3,070	3,280	6,580	2,450	1,500	1,520
14	1,370	1,940	3,160	12,600	6,460	3,360	2,870	3,440	6,000	2,380	1,500	1,510
15	1,530	1,950	2,750	7,980	6,300	3,260	2,760	3,680	5,640	2,320	1,550	1,470
16	1,840	1,730	*2,500	7,840	5,860	*3,240	2,860	3,520	5,530	2,270	1,560	1,460
17	1,460	1,450	2,350	17,200	6,060	3,520	3,080	3,440	5,410	2,140	1,540	1,450
18	1,570	1,570	2,210	57,300	8,310	3,420	3,250	3,550	5,410	2,110	1,500	1,450
19	1,570	1,590	2,170	44,700	6,780	5,090	3,190	5,980	5,260	2,090	1,490	1,450
20	1,580	1,590	2,330	*26,600	5,980	5,410	3,330	7,930	4,860	2,050	1,470	1,460
21	1,550	1,580	2,370	18,900	5,490	5,260	3,580	7,120	4,280	1,960	*1,490	1,460
22	1,520	1,570	2,310	12,800	5,090	5,450	4,040	6,640	4,280	1,930	1,440	1,480
23	1,560	1,560	2,280	9,690	4,840	5,660	4,510	7,160	4,150	1,900	1,500	1,510
24	1,560	1,550	2,150	7,980	4,580	6,320	4,420	8,930	4,420	1,860	1,500	1,550
25	1,550	1,530	2,060	7,040	4,350	8,550	4,260	6,880	*4,130	1,830	1,520	1,570
26	1,510	1,520	2,070	6,740	4,150	6,780	4,350	13,500	3,850	1,810	1,770	1,550
27	1,510	1,550	2,120	6,060	4,100	5,860	5,160	13,300	3,730	1,770	2,290	1,560
28	1,530	1,560	2,110	5,470	4,110	5,430	6,160	9,930	3,630	1,750	1,870	1,560
29	1,370	1,520	2,100	5,430	-	5,150	5,370	8,270	3,650	1,680	1,870	1,650
30	1,560	1,560	3,700	5,700	-	4,750	4,800	7,390	3,450	1,680	1,890	1,600
31	1,560	-	3,600	5,800	-	4,580	-	6,780	-	1,660	1,810	-
Total	45,100	47,790	94,960	354,170	261,720	137,960	117,160	177,920	169,420	72,370	50,500	46,840
Mean	1,455	1,593	3,063	11,420	9,347	4,450	3,905	5,739	5,647	2,335	1,629	1,561
Ac-ft	89,450	94,790	188,400	702,500	519,100	273,600	232,400	352,900	336,000	143,500	100,200	92,910

Calendar year 1952: Max 29,800 Min 1,300 Mean 4,096 Ac-ft 2,973,000
Water year 1952-53: Max 57,300 Min 1,310 Mean 4,318 Ac-ft 3,128,000

Peak discharge (base, 13,000 cfs).--Dec. 10 (7 p.m.) 17,000 cfs (8.18 ft); Jan. 9 (2:30 p.m.) 18,100 cfs (8.55 ft); Jan. 14 (12:30 a.m.) 18,000 cfs (8.50 ft); Jan. 18 (10 p.m.) 77,000 cfs (23.90 ft); Feb. 3 (8:30 p.m.) 26,500 cfs (10.95 ft); Feb. 8 (2 a.m.) 27,800 cfs (11.34 ft); May 26 (3:30 p.m.) 22,300 cfs (9.60 ft).
* Discharge measurement made on this day.

Applegate River near Copper, Oreg.

Location.--Lat 42°03'30", long. 123°06'50", in SE¼ sec. 25, T. 40 S., R. 4 W., on right bank a quarter of a mile downstream from French Gulch, 1½ miles downstream from Squaw Creek, and 3 miles northeast of Copper store.

Drainage area.--220 sq mi.

Records available.--December 1938 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 1,759.66 ft above mean sea level, datum of 1929.

Average discharge.--14 years (1939-53), 426 cfs.

Extremes.--Maximum discharge during year, 15,300 cfs Jan. 18 (gage height, 19.48 ft), from rating curve extended above 6,300 cfs by logarithmic plotting; minimum, 40 cfs Nov. 28 (gage height, 1.00 ft).
1938-53: Maximum discharge, that of Jan. 18, 1953; minimum, 20 cfs Sept. 23-25, 1939.

Remarks.--Records good. About 11 cfs diverted for irrigation of 482 acres above station in Applegate River basin; Grand Applegate ditch diverts about 3.3 cfs around station on left bank. An average of about 8 cfs for irrigation is diverted into Thompson Creek basin. Several hundred acre-feet normally stored each winter in Squaw Lake for irrigation the following summer.

Revisions.--WSP 1064: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 7-30)

1.0	40	4.0	920
1.5	107	8.0	4,000
2.0	196	12.0	7,520
2.5	315	16.0	11,200
3.0	480		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	51	59	140	275	835	462	531	840	962	591	153	99
2	47	62	112	297	*825	445	531	760	926	595	153	94
3	42	62	90	297	1,590	431	583	734	909	603	153	90
4	47	58	115	272	1,470	417	603	865	882	595	149	85
5	48	56	171	255	1,300	414	639	1,110	887	587	149	84
6	47	55	204	246	1,450	414	635	*1,240	1,130	567	158	84
7	44	52	515	498	1,510	414	595	1,110	1,240	539	144	77
8	44	51	260	1,890	1,400	431	563	898	992	490	132	76
9	52	49	179	3,950	1,170	462	527	785	980	445	128	76
10	51	48	566	1,910	1,050	515	504	720	892	414	128	74
11	51	49	487	1,680	926	480	476	688	914	396	125	69
12	49	59	434	3,700	845	462	452	693	962	372	115	70
13	49	91	324	*3,430	795	424	445	729	887	354	112	67
14	48	101	258	2,100	760	414	434	810	909	336	109	66
15	46	74	222	1,470	716	403	434	756	998	312	101	64
16	46	64	200	1,450	675	417	459	711	1,100	291	97	63
17	44	62	188	3,610	671	392	473	790	1,170	280	94	63
18	48	61	175	*11,000	635	417	459	968	1,120	262	94	64
19	53	63	166	6,130	603	448	501	1,620	980	253	94	63
20	51	63	158	6,840	587	452	623	1,190	876	233	*96	62
21	51	*62	147	3,850	559	*442	835	1,080	850	224	96	63
22	49	61	142	2,440	539	452	1,060	909	830	216	93	64
23	48	58	137	1,850	519	501	1,060	909	*815	214	91	64
24	48	56	132	1,550	501	647	938	835	770	206	94	64
25	48	53	132	1,360	484	671	998	775	734	194	93	63
26	47	53	138	1,140	476	631	1,380	780	706	188	145	61
27	44	53	171	1,020	473	603	2,230	765	671	185	121	56
28	44	52	153	920	476	595	1,500	775	639	175	104	59
29	44	53	185	855	-	563	1,190	870	615	168	123	62
30	61	55	527	805	-	551	974	914	599	164	113	62
31	62	-	360	775	-	543	-	944	-	156	105	-
Total	1,504	1,795	7,188	67,865	23,870	14,913	22,632	27,573	26,945	10,605	3,662	2,108
Mean	43.5	59.8	232	2,189	852	481	754	889	898	342	118	70.3
Ac-ft	2,980	3,560	14,260	134,600	47,350	29,580	44,890	54,690	53,440	21,030	7,260	4,180

Calendar year 1952: Max 4,070 Min 42 Mean 536 Ac-ft 388,900
Water year 1952-53: Max 11,000 Min 42 Mean 577 Ac-ft 417,800

Peak discharge (base, 1,700 cfs).--Jan. 9 (6:30 a.m.) 5,220 cfs (9.44 ft); Jan. 12 (7 p.m.) 5,400 cfs (9.65 ft); Jan. 18 (4 p.m.) 15,300 cfs (19.48 ft); Feb. 3 (3:30 p.m.) 2,100 cfs (5.63 ft); Apr. 27 (9:30 a.m.) 2,580 cfs (6.23 ft); May 19 (5:30 a.m.) 1,820 cfs (5.28 ft).
* Discharge measurement made on this day.

Applegate River near Ruch, Oreg.

Location.--Lat 42°10'40", long. 123°02'50", in sec. 15, T. 39 S., R. 3 W., on downstream side of left pier of Cameron Bridge, 1.9 miles (revised) upstream from Little Applegate River and 4½ miles south of Ruch.

Drainage area.--297 sq mi.

Records available.--June 1911 to September 1914, September 1925 to September 1953 (discontinued). Published as "near Buncom" 1911-14.

Gage.--Water-stage recorder. Datum of gage is 1,475.64 ft above mean sea level, datum of 1929, supplementary adjustment of 1947 (levels by Corps of Engineers). June 18, 1911, to Sept. 30, 1914, staff gage at datum 0.88 ft lower.

Average discharge.--30 years (1911-14, 1925-26, 1927-53), 382 cfs.

Extremes.--Maximum and minimum discharges for the water years 1912-14, 1938, 1944, and 1953, some of which have been revised, superseding those published in water-supply papers indicated, are contained in the following table:

WSP	Water year	Maximum			Minimum	
		Date	Discharge (cfs)	Gage height (feet)	Date	Discharge (cfs)
332-C	1912	Feb. 17, 1912	‡5,010	†7.5	Jan. 3, 1912	††38
394	1913	Nov. 9, 1912	‡2,270	†5.0	Sept. 22-25, 1913	††38
394	1914	Jan. 21, 1914	a6,300	†8.5	Sept. 2, 3, 1914	††37
864	1938	Nov. 20, 1937	11,600	10.40	Sept. 22, 23, 1938	38
1014	1944	Mar. 10, 1944	a976	2.28	Sept. 25, 1944	18
-	1953	Jan. 18, 1953	15,000	†13.5	Oct. 3, 8, 1952	45

† From graph based on gage readings.
‡ Not previously published.
†† Minimum daily.
a Revised.

1911-14, 1925-53: Maximum discharge, 20,000 cfs Feb. 20, 1927 (gage height, 16.0 ft), from rating curve extended above 8,000 cfs; minimum, 7 cfs Sept. 2, 1929.

Remarks.--Records good except those for periods of no gage-height record, which are poor. Diversions for irrigation of about 700 acres above station in Applegate River basin. Cameron (Comstock) ditch diverts as much as 14 cfs around station on left bank. An average of about 8 cfs is diverted above station for irrigation in Thompson Creek basin. Several hundred acre-feet stored in Squaw Lake each spring for irrigation the following summer.

Revisions (water years).--WSP 1064: Drainage area. WSP 1094: 1946(M). Revised figures of discharge, in cubic feet per second, for periods in the water year 1912 and for complete water years 1913-14, 1938, superseding those published in WSP 332-C, 394, and 864, are given herein.

Date	Discharge	Date	Discharge	Date	Discharge
1912		1912-Con.		1912-Con.	
Jan. 12	1,530	Feb. 17	4,410	May 11	1,140
13	1,890	18	3,290	12	1,140
14	1,140	19	1,890	13	1,210
15	750	20	1,450	14	1,210
16	690	21	1,140	15	1,210
25	2,770	22	1,000	16	1,070
26	2,270	23	870	17	1,000
27	1,210	24	750	18	1,070
28	870	25	690	19	1,070
29	690	26	630	20	1,070
Feb. 5	630	May 1	1,620	21	930
6	600	2	1,290	22	810
8	750	3	1,000	23	810
9	870	4	930	24	810
10	1,070	5	930	25	810
11	930	6	930	26	870
12	750	7	1,070	27	1,000
13	690	8	1,210	28	870
14	630	9	1,450	29	1,070
16	1,710	10	1,290	30	1,070
				31	930

Month	Cfs-days	Maximum	Minimum	Mean	Runoff in acre-feet
January 1912	19,689	2,770	38	635	39,000
February	29,176	4,410	394	1,010	58,100
May	32,890	1,620	810	1,060	65,200
Water year 1911-12	142,644	4,410	38	390	283,000
Calendar year 1912	160,612	4,410	38	439	319,000

Applegate River near Ruch, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1912 to September 1913

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47	88	168	470	447	339	750	630	1,000	380	145	48
2	47	88	162	380	470	339	750	570	1,000	339	145	48
3	47	95	162	380	470	339	630	570	1,000	320	133	56
4	52	95	178	360	470	380	630	630	870	380	129	*111
5	52	520	156	300	424	402	930	750	810	339	125	95
6	59	1,370	147	264	424	424	750	1,000	750	300	119	84
7	47	630	138	339	424	470	690	1,210	690	282	113	74
8	52	424	132	470	424	520	660	1,210	690	264	106	74
9	52	1,530	132	339	424	630	630	1,370	630	228	102	68
10	47	1,070	132	320	424	690	690	1,140	545	221	95	64
11	47	545	132	300	470	690	810	1,070	520	194	84	61
12	47	630	147	300	495	630	1,000	1,000	520	178	80	56
13	44	690	211	570	520	570	870	930	470	168	74	51
14	44	870	402	570	520	520	810	810	470	162	84	51
15	44	690	600	520	570	470	750	810	424	156	80	51
16	44	520	520	424	660	424	690	930	380	147	80	48
17	44	424	545	380	750	470	690	930	380	138	74	46
18	44	380	545	1,370	690	520	750	1,000	380	138	68	46
19	44	380	470	810	630	470	750	930	470	132	68	46
20	47	380	402	600	600	470	810	930	380	127	68	42
21	47	339	380	495	545	424	870	870	339	119	68	42
22	56	282	300	470	470	447	870	1,070	424	162	68	38
23	180	264	300	380	470	380	810	1,210	402	228	64	38
24	99	228	282	380	424	380	810	1,210	360	470	61	38
25	119	221	264	424	424	339	1,000	1,140	360	380	61	38
26	205	201	228	424	402	339	1,140	1,070	424	*271	56	42
27	99	201	228	424	380	339	1,000	1,070	565	228	51	42
28	81	194	221	424	339	339	810	1,070	545	211	51	42
29	112	188	221	424	-	424	750	810	447	194	56	48
30	124	188	690	424	-	690	690	870	424	178	51	48
31	99	-	470	424	-	810	-	930	-	168	51	-
Total	2,172	13,725	9,065	14,159	13,760	14,678	23,790	29,740	16,669	7,202	2,610	1,636
Mean	70.1	458	292	457	491	473	793	959	556	232	84.2	54.5
Ac-ft	4,310	27,300	18,000	28,100	27,300	29,100	47,200	59,000	33,100	14,300	5,180	3,240

Calendar year 1912: Max 4,410 Min 38 Mean 439 Ac-ft 319,000
Water year 1912-13: Max 1,530 Min 38 Mean 409 Ac-ft 296,000

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1913 to September 1914

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	48	201	1,620	772	1,210	630	690	772	230	70	40
2	48	61	178	2,070	772	1,140	630	810	772	212	70	37
3	48	56	162	1,620	665	1,000	750	930	772	212	70	37
4	48	56	147	1,450	665	930	1,000	930	665	212	65	40
5	48	61	132	1,450	615	930	1,210	870	640	186	65	40
6	48	828	132	1,210	590	1,070	1,070	870	540	186	65	40
7	48	565	127	1,620	565	1,070	1,070	930	515	179	60	40
8	74	188	119	1,210	515	1,140	1,000	930	515	179	60	53
9	84	127	119	1,000	515	1,210	1,070	930	466	173	60	49
10	64	106	111	810	515	1,290	1,620	870	466	164	56	45
11	64	102	162	690	515	1,290	1,210	870	515	154	56	42
12	61	106	162	690	615	1,290	1,070	870	490	148	53	42
13	61	95	228	690	615	1,290	1,140	930	466	142	53	40
14	61	84	194	810	615	1,210	1,370	1,000	442	142	53	40
15	51	80	178	810	590	1,140	2,270	1,070	442	134	49	40
16	56	80	162	690	590	1,140	1,450	1,000	442	126	53	42
17	61	80	162	690	615	1,140	1,210	1,000	442	120	49	418
18	61	138	147	690	717	1,140	1,140	930	442	115	49	134
19	61	95	132	630	828	1,210	1,290	930	394	108	45	179
20	56	102	132	690	828	1,210	1,370	930	370	100	45	115
21	56	102	127	2,570	950	1,290	1,140	1,000	326	100	45	100
22	51	95	132	2,970	888	1,290	1,000	1,070	326	95	45	*84
23	51	106	147	2,170	828	1,210	930	1,070	326	91	42	74
24	51	132	147	1,710	772	1,070	870	930	442	91	42	74
25	51	132	211	1,620	888	1,000	810	930	326	91	40	70
26	48	228	178	2,670	828	930	810	810	306	91	40	70
27	48	665	162	1,710	772	810	750	750	248	84	40	70
28	48	282	147	1,290	888	750	690	690	248	78	40	70
29	48	380	132	1,000	-	810	660	690	248	74	40	65
30	48	264	178	930	-	690	660	750	230	74	40	65
31	48	-	3,400	870	-	630	-	*810	-	74	40	-
Total	1,699	5,444	8,048	40,650	19,531	33,530	31,890	27,790	13,594	4,165	1,600	2,255
Mean	54.8	181	260	1,310	698	1,080	1,060	896	453	134	51.6	75.2
Ac-ft	3,370	10,800	16,000	80,600	38,800	66,400	63,100	55,100	27,000	8,240	3,170	4,470

Calendar year 1913: Max 3,400 Min 38 Mean 382 Ac-ft 277,000
Water year 1913-14: Max 3,400 Min 37 Mean 521 Ac-ft 377,000

* Discharge measurement made on this day.

Applegate River near Ruch, Oreg.--Continued

Discharge, in cubic feet per second, water year October 1937 to September 1938

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	63	511	849	956	1,640	907	2,530	1,540	415	107	51
2	118	55	475	788	1,260	1,890	851	*2,080	*1,580	396	101	53
3	61	52	441	728	1,260	1,690	830	1,740	1,580	374	101	50
4	71	50	409	692	1,030	1,400	865	1,530	1,670	352	96	50
5	74	50	391	674	942	1,220	879	1,400	1,720	342	86	49
6	63	53	369	644	2,830	*1,050	816	1,330	1,670	338	*82	54
7	*58	53	352	614	4,990	970	809	1,340	1,580	306	82	50
8	52	53	339	587	3,050	900	*921	1,380	1,410	288	90	51
9	49	57	338	554	1,890	865	1,090	*1,490	1,200	275	88	50
10	47	337	3,320	*538	*1,490	851	1,090	1,540	1,080	266	82	*49
11	46	709	7,640	521	1,310	858	1,130	1,650	1,020	266	81	47
12	44	329	3,800	516	1,130	978	1,090	1,940	1,070	266	79	47
13	44	294	2,100	510	1,220	1,400	986	2,270	1,000	248	79	46
14	52	890	1,550	961	1,260	1,180	942	*2,630	954	*248	73	44
15	60	488	1,280	1,340	1,090	1,400	956	2,790	912	239	73	44
16	52	*442	1,070	1,080	935	2,760	1,540	2,540	856	226	73	44
17	50	866	954	1,300	851	2,000	2,110	2,100	776	214	68	47
18	*67	770	849	1,460	795	1,840	2,760	1,800	710	198	60	42
19	60	3,300	770	1,260	736	2,340	3,180	1,630	698	183	60	42
20	53	7,180	710	1,060	700	1,940	2,400	1,600	*692	172	60	43
21	52	2,060	662	1,020	688	1,590	2,280	1,620	704	158	60	42
22	50	1,490	632	1,610	774	1,740	1,940	1,770	710	*149	60	41
23	49	2,160	592	1,430	978	3,420	1,890	2,000	668	149	59	41
24	47	1,440	598	1,210	1,440	*2,580	1,890	2,180	604	143	59	50
25	47	1,220	554	1,070	1,540	1,890	1,840	2,220	570	140	56	50
26	47	1,090	543	975	1,440	1,590	1,790	2,290	554	137	*60	51
27	46	851	582	940	1,400	1,400	1,790	2,150	521	134	57	54
28	44	718	609	920	1,400	1,310	1,890	1,820	500	152	59	60
29	44	*634	609	860	-	1,220	2,000	1,630	480	119	60	63
30	61	566	1,260	794	-	1,090	2,700	1,570	460	*117	56	59
31	94	-	968	880	-	986	-	1,490	-	117	54	-
Total	1,774	28,320	35,278	28,385	39,385	47,988	46,162	58,050	29,489	7,127	2,261	1,464
Mean	57.2	944	1,138	916	1,407	1,548	1,539	1,873	983	230	72.9	48.8
Ac-ft	3,520	56,170	69,970	56,300	78,120	95,180	91,560	115,100	58,490	14,140	4,480	2,900

Calendar year 1937: Max 7,640 Min 30 Mean 469 Ac-ft 339,200
Water year 1937-38: Max 7,640 Min 41 Mean 892 Ac-ft 645,900

* Discharge measurement made on this day.

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	70	143	312	828	480	540	828	949	560	152	102
2	51	70	131	308	810	455	540	750	914	570	152	100
3	46	70	111	315	1,530	435	*580	714	900	590	152	98
4	50	68	113	293	1,500	425	606	822	894	570	152	*87
5	52	66	215	*276	1,350	415	648	1,040	894	550	152	89
6	52	63	219	265	1,420	415	648	1,180	1,100	540	163	93
7	51	62	638	514	1,530	415	600	1,070	1,230	510	a150	85
8	46	58	354	2,060	1,510	425	560	882	996	460	a145	83
9	50	57	222	4,380	1,250	440	525	*780	991	415	a140	80
10	50	56	*596	2,030	1,100	485	500	714	900	388	a130	76
11	50	56	555	1,620	984	465	470	678	*914	364	a125	73
12	50	63	470	3,650	900	465	450	684	942	348	a120	71
13	48	100	370	3,610	*846	a450	445	714	876	328	a115	69
14	48	*122	290	2,230	810	a430	425	786	882	310	*110	71
15	48	87	248	1,530	768	a400	425	744	956	292	104	71
16	*50	76	222	1,400	720	a420	445	702	1,040	*282	100	69
17	50	73	203	3,370	726	*584	465	774	1,130	268	93	66
18	56	71	187	11,200	684	400	455	900	1,100	246	91	69
19	65	73	175	7,070	630	465	485	1,640	956	236	91	73
20	57	73	167	6,950	595	485	585	1,170	858	215	89	73
21	52	70	154	4,300	570	*470	816	1,060	828	206	91	74
22	51	65	146	2,740	560	470	1,040	894	810	203	91	76
23	54	62	138	2,030	545	505	1,080	894	804	203	93	76
24	56	60	136	1,630	540	684	928	840	762	194	95	71
25	56	60	133	1,370	535	732	970	786	726	179	93	69
26	54	60	138	1,150	535	678	1,280	810	690	177	129	67
27	54	60	187	998	535	648	2,310	804	660	174	124	64
28	56	60	164	900	505	636	1,510	810	612	171	108	66
29	57	63	*178	840	-	585	1,150	888	585	168	120	67
30	66	62	545	798	-	570	956	914	575	163	120	*67
31	71	-	410	756	-	550	-	956	-	152	110	-
Total	1,655	2,056	7,956	70,895	24,816	15,282	22,437	27,228	26,476	10,032	3,700	2,295
Mean	53.4	68.5	257	2,287	886	493	748	878	883	324	119	76.5
Ac-ft	3,280	4,080	15,780	140,600	49,220	30,310	44,500	54,010	52,510	19,900	7,340	4,550

Calendar year 1952: Max 5,220 Min 46 Mean 562 Ac-ft 407,600
Water year 1952-53: Max 11,200 Min 46 Mean 589 Ac-ft 426,100

Peak discharge (base, 1,800 cfs).--Jan. 9 (9 a.m.) 5,800 cfs (6.58 ft); Jan. 12 (9 p.m.) 5,720 cfs (6.52 ft); Jan. 18 (5 p.m.) 15,000 cfs (13.5 ft); Feb. 3 (5 p.m.) 2,230 cfs (3.48 ft); Feb. 7 (7 p.m.) 1,800 cfs (3.05 ft); Apr. 27 (11 to 12 a.m.) 2,650 cfs (3.90 ft); May 19 (6 p.m.) 1,910 cfs (3.16 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of records for Bear Creek at Medford, and South Fork Little Butte Creek near Lake Creek.

Applegate River near Applegate, Oreg.

Location.--Lat 42°14'30", long. 123°08'10", in NE¼ sec. 26, T. 38 S., R. 4 W., on left bank 0.9 mile downstream from Keeler Creek and 2 miles southeast of Applegate.

Drainage area.--480 sq mi.

Records available.--October 1938 to September 1953.

Gage.--Water-stage recorder. Datum of gage is 1,285.33 ft above mean sea level, datum of 1929. Prior to Dec. 23, 1938, staff gage at same site and datum.

Average discharge.--15 years, 503 cfs.

Extremes.--Maximum discharge during year, 25,100 cfs Jan. 18 (gage height, 15.60 ft), from rating curve extended above 5,600 cfs by logarithmic plotting; minimum, 28 cfs Oct. 7.
1938-53: Maximum discharge, that of Jan. 18, 1953; minimum, 7 cfs Sept. 18, 1945, Aug. 28, 1951.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Many diversions above station for irrigation of about 4,000 acres in Applegate River basin. About 10 cfs is diverted through Wagner Gap to Bear Creek basin for several months each year; Fowler-Keeler and Berryman ditches may divert 4.3 and 13.6 cfs, respectively, around station.

Revisions.--WSP 1064: Drainage area.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

0.8	30	4.0	1,500
1.1	62	5.0	2,500
1.5	130	6.0	3,800
2.0	249	9.0	8,720
2.5	445	13.0	18,100
3.0	720		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	a75	138	378	1,030	610	696	1,020	1,290	632	145	79
2	38	a80	160	360	1,000	600	690	899	1,230	632	134	76
3	34	a80	130	364	1,810	572	732	836	1,220	660	140	76
4	35	a75	124	335	1,920	550	774	944	1,150	649	132	68
5	36	a70	232	315	1,630	539	801	*1,220	1,160	632	120	70
6	35	a70	229	308	1,780	534	822	1,400	1,380	610	136	73
7	34	a65	744	582	1,890	528	780	1,300	1,630	594*	128	68
8	32	*60	506	2,420	2,040	544	738	1,060	1,360	544	118	63
9	33	55	301	5,180	1,710	561	672	920	1,340	495	105	56
10	35	52	669	2,540	1,500	632	638	829	1,230	440	105	52
11	34	55	726	1,920	1,320	605	610	774	1,220	414	96	55
12	32	65	578	4,130	1,200	594	572	762	1,290	391	94	52
13	31	94	460	4,610	1,100	544	556	794	1,220	355	89	50
14	32	134	364	2,890	1,050	512	534	899	1,180	323	79	49
15	32	97	308	1,960	976	495	512	850	1,280	315	78	50
16	34	81	277	1,720	906	512	534	780	1,390	287	78	50
17	41	75	258	3,810	899	500	561	864	1,460	268	75	46
18	44	72	235	16,400	871	506	550	1,030	1,460	243	72	42
19	52	73	218	8,940	801	610	578	1,890	1,310	224	70	44
20	56	75	216	8,580	756	654	708	1,470	1,150	201	*66	46
21	54	73	198	5,150	726	*638	992	1,350	1,080	a200	68	48
22	54	72	191	*3,340	702	627	1,210	1,140	*1,060	a190	69	49
23	54	69	184	2,470	666	660	1,360	1,160	1,030	a190	66	50
24	55	68	182	2,000	644	857	1,180	1,100	968	a180	69	49
25	55	68	180	1,720	616	1,000	1,210	1,000	892	a180	69	48
26	55	66	182	1,490	605	913	1,520	1,130	843	a170	90	47
27	55	65	227	1,280	594	850	2,680	1,220	780	a170	114	44
28	55	61	206	1,160	616	836	1,870	1,140	732	a160	90	44
29	a55	65	*208	1,070	-	774	1,440	1,230	696	a160	96	49
30	a75	70	578	1,000	-	732	1,190	1,250	654	151	97	50
31	a80	-	495	944	-	720	-	1,270	-	149	90	-
Total	1,385	2,180	9,704	89,366	31,358	19,809	27,710	33,531	34,685	10,799	2,978	1,643
Mean	44.7	72.7	313	2,883	1,120	639	924	1,082	1,156	348	96.1	54.8
Ac-ft	2,750	4,320	19,250	177,300	62,200	39,290	54,960	66,510	68,800	21,420	5,910	3,260

Calendar year 1952: Max 6,880 **Min** 31 **Mean** 679 **Ac-ft** 492,600
Water year 1952-53: Max 16,400 **Min** 31 **Mean** 726 **Ac-ft** 526,000

Peak discharge (base, 2,200 cfs).--Jan. 9 (9:30 a.m.) 6,740 cfs (7.93 ft); Jan. 12 (10 p.m.) 6,590 cfs (7.84 ft); Jan. 18 (6 p.m.) 25,100 cfs (15.60 ft); Feb. 3 (7 p.m.) 2,690 cfs (5.16 ft); Feb. 7 (9 p.m.) 2,350 cfs (4.86 ft); Apr. 27 (2 p.m.) 3,180 cfs (5.47 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage when available, and records for Applegate River near Copper.

Powell Creek near Williams, Oreg.

Location.--Lat 42°16'00", long. 123°17'40", near center of sec. 16, T. 38 S., R. 5 W., on left bank 0.1 mile upstream from Blodgett ditch intake and 2 miles northwest of Williams.

Drainage area.--8.6 sq mi, approximately.

Records available.--September 1946 to September 1953.

Gage.--Water-stage recorder. Altitude of gage is 1,680 ft (by barometer).

Average discharge.--7 years, 15.4 cfs.

Extremes.--Maximum discharge during year, 1,110 cfs Jan. 18 (gage height, 5.36 ft), from rating curve extended above 550 cfs on basis of slope-area determination at gage height, 4.92 ft; minimum, 1.1 cfs Oct. 7.
1946-53: Maximum discharge, that of Jan. 18, 1953; minimum, 0.9 cfs Oct. 3, 4, 1950.

Remarks.--Records fair. No diversion or regulation above station.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 21 to Feb. 12, Aug. 19 to Sept. 30)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
0.9	0.9	1.8	16	0.8	1.9	2.5	62
1.0	1.6	2.0	25	1.0	3.5	3.0	110
1.2	3.5	2.5	57	1.2	6.2	3.5	190
1.4	6.2	3.0	108	1.5	13	4.0	322
1.6	10	3.5	190	2.0	32	4.6	595

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	1.6	3.5	14	34	15	22	16	26	7.3	3.3	3.0
2	1.3	1.6	4.8	13	33	15	20	15	23	7.2	3.3	3.0
3	1.3	*1.6	3.0	12	72	14	20	14	21	6.8	3.3	2.8
4	1.2	1.5	3.4	11	73	13	18	13	19	6.6	3.3	2.8
5	1.2	1.5	4.7	9.8	57	13	18	*12	18	6.4	3.3	2.8
6	1.2	1.5	12	8.9	48	12	17	12	17	6.0	3.5	2.7
7	1.2	1.5	51	42	50	12	17	12	17	5.9	3.3	2.7
8	1.2	1.5	16	124	58	12	16	11	15	5.8	3.2	2.7
9	1.4	1.5	8.4	192	50	11	15	11	20	5.6	3.0	2.7
10	1.5	1.5	59	88	40	12	14	10	18	5.4	3.0	2.5
11	1.5	1.6	25	58	34	11	14	9.9	17	5.3	2.9	2.5
12	1.4	2.5	18	72	30	11	13	9.5	17	5.2	2.7	2.5
13	1.4	3.7	13	121	27	11	12	9.2	17	5.2	2.6	2.5
14	1.3	3.7	9.8	102	25	10	12	9.7	15	5.2	2.5	2.5
15	1.3	2.5	8.0	69	23	10	11	9.2	15	5.0	2.5	2.4
16	1.3	2.0	7.3	87	21	12	11	9.0	14	4.7	2.6	2.4
17	1.3	2.0	6.7	167	23	13	13	8.6	13	4.6	2.5	2.4
18	1.5	1.9	6.2	584	26	16	12	8.8	12	4.3	2.5	2.4
19	1.7	1.9	5.8	224	25	*25	12	12	12	4.3	*2.6	2.4
20	1.6	1.9	5.4	235	24	25	11	12	11	4.2	2.7	2.4
21	1.5	1.9	5.0	130	23	25	11	21	10	4.1	2.7	2.5
22	1.5	1.9	5.4	*81	21	25	11	22	*9.9	4.0	2.7	2.5
23	1.5	1.9	5.4	58	20	29	11	26	9.7	3.9	2.7	2.5
24	1.5	1.9	5.2	45	19	39	10	29	9.2	3.9	2.7	2.4
25	1.5	1.9	5.0	39	18	41	10	28	9.0	3.9	2.8	2.2
26	1.5	1.9	5.2	37	17	36	10	44	8.8	3.7	5.8	2.2
27	1.4	1.9	5.9	33	16	32	16	52	8.3	3.7	3.4	2.2
28	1.4	1.9	5.8	30	16	30	15	42	8.3	3.5	3.3	2.4
29	1.5	1.9	*7.5	29	-	28	16	36	8.1	3.5	3.5	2.5
30	1.5	1.9	44	32	-	26	16	32	7.7	3.4	3.3	3.0
31	1.6	-	22	34	-	24	-	28	-	3.3	3.0	-
Total	43.6	58.0	387.4	2,781.7	923	608	424	503.9	426.0	151.9	94.5	76.5
Mean	1.41	1.93	12.5	89.7	33.0	19.6	14.1	18.8	14.2	4.90	3.05	2.55
Cfsm	0.164	0.224	1.45	10.4	3.84	2.28	1.64	2.19	1.65	0.570	0.355	0.297
In.	0.19	0.25	1.68	12.03	3.99	2.63	1.83	2.53	1.84	0.66	0.41	0.33
Ac-ft	86	115	768	5,520	1,830	1,210	841	1,160	845	301	187	152

Calendar year 1952: Max 292 Min 1.2 Mean 14.1 Cfsm 1.64 In. 22.33 Ac-ft 10,220
Water year 1952-53: Max 584 Min 1.2 Mean 18.0 Cfsm 2.09 In. 28.37 Ac-ft 13,020

Peak discharge (base, 150 cfs).--Jan. 9 (5:30 a.m.) 259 cfs (3.79 ft); Jan. 18 (2 p.m.) 1,110 cfs (5.36 ft).
* Discharge measurement made on this day.

Applegate River near Wilderville, Oreg.

Location.--Lat 42°21'10", long. 123°24'10", in W½ sec. 15, T. 37 S., R. 6 W., on left bank 900 ft downstream from Jackson Creek and 4 miles southeast of Wilderville.

Drainage area.--694 sq mi.

Records available.--October 1938 to September 1953.

Gage.--Staff gage read once or twice daily. Datum of gage is 949.54 ft above mean sea level, datum of 1929 (levels by Corps of Engineers).

Average discharge.--15 years, 724 cfs.

Extremes.--Maximum discharge during year, 27,700 cfs Jan. 18 (gage height, 18.3 ft, from floodmark), from rating curve extended above 12,000 cfs by logarithmic plotting; minimum observed, 25 cfs Oct. 5.
1938-53: Maximum discharge, that of Jan. 18, 1953; minimum, 3.0 cfs Sept. 12-15, 18-25, 1939, Sept. 3, 1950.

Remarks.--Records fair. Many diversions above station for irrigation and mining. Two irrigation ditches on left bank divert about 17 cfs around station. No regulation.

Revisions.--WSP 1064: Drainage area.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Dec. 7 to Jan. 17)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
1.2	25	3.0	490	1.5	54	4.0	1,170
1.5	54	4.0	1,100	1.8	98	5.0	2,100
1.8	98	5.0	2,050	2.0	140	7.0	4,900
2.0	140	8.0	6,180	2.5	290	11.0	12,300
2.5	285	10.0	9,700	3.0	510	16.0	22,600

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	120	145	698	1,640	873	1,020	1,350	1,760	796	165	160
2	28	120	296	614	1,650	838	1,010	1,220	1,660	782	155	155
3	30	129	271	575	3,260	803	992	1,090	1,590	810	160	140
4	27	129	257	495	3,670	796	1,020	1,110	1,520	796	160	106
5	25	131	440	463	2,920	775	1,050	1,330	1,500	754	140	84
6	27	125	939	445	2,860	754	1,060	*1,600	1,570	728	150	84
7	28	116	2,310	848	2,980	740	1,020	1,610	2,080	698	160	78
8	27	*112	1,190	3,580	3,530	740	1,010	1,330	1,800	650	160	78
9	43	108	728	7,770	2,770	740	950	1,170	1,780	614	155	69
10	41	108	1,970	4,110	2,400	803	894	1,080	1,640	485	140	66
11	30	104	1,540	2,510	2,080	852	866	1,010	1,590	456	131	64
12	50	112	1,010	4,390	1,850	859	838	992	1,640	428	118	72
13	47	150	818	6,740	1,650	803	810	978	1,590	410	110	69
14	52	220	608	4,360	1,550	734	754	1,020	1,480	366	98	66
15	56	211	505	3,060	1,470	734	728	1,050	1,590	350	84	59
16	59	175	450	2,570	1,370	734	740	1,020	1,680	294	78	66
17	56	155	396	5,430	1,370	789	796	1,050	1,800	266	72	69
18	59	142	376	21,300	1,540	796	782	1,140	1,840	280	61	72
19	83	145	388	*16,900	1,310	*1,100	754	1,880	1,610	252	*59	69
20	108	152	348	15,700	1,250	1,150	810	1,950	1,410	230	60	65
21	112	142	313	7,950	1,170	1,170	1,110	1,880	1,330	205	61	66
22	112	133	296	5,300	1,130	1,130	1,410	1,660	*1,210	196	62	69
23	112	129	285	4,000	1,080	1,190	1,500	1,640	1,170	182	66	76
24	104	129	264	3,300	992	1,370	1,330	1,630	1,150	155	68	81
25	112	122	257	2,770	943	1,580	1,390	1,520	1,090	160	69	76
26	104	118	288	2,510	915	1,410	1,450	1,620	1,050	170	84	75
27	108	118	368	2,150	915	1,310	2,850	2,120	964	182	131	69
28	104	120	356	1,890	901	1,230	2,220	1,780	880	160	150	81
29	108	116	500	1,760	-	1,150	1,780	1,820	866	170	155	88
30	116	129	*1,240	1,670	-	1,080	1,570	1,780	852	165	165	93
31	120	-	981	1,580	-	1,060	-	1,740	-	170	160	-
Total	2,115	4,020	20,133	137,438	51,166	30,093	34,514	44,170	43,692	12,360	3,587	2,465
Mean	68.2	134	649	4,433	1,827	971	1,150	1,425	1,456	399	116	82.2
Ac-ft	4,200	7,970	39,930	272,600	101,500	59,690	68,460	87,610	86,660	24,520	7,110	4,890

Calendar year 1952: **Max** 12,900 **Min** 17 **Mean** 1,004 **Ac-ft** 728,500
Water year 1952-53: **Max** 21,300 **Min** 25 **Mean** 1,057 **Ac-ft** 765,100

* Discharge measurement made on this day.

Slate Creek at Wonder, Oreg.

Location.--Lat 42°21'40", long. 123°31'10", in SW¼ sec. 10, T. 37 S., R. 7 W., on left bank half a mile upstream from Elliot Creek and 0.4 mile east of Wonder.

Drainage area.--30.9 sq mi.

Records available.--July to November 1913, October 1945 to September 1953 in reports of Geological Survey. October 1943 to September 1945 in files of State engineer.

Gage.--Water-stage recorder. Datum of gage is 1,034.85 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Nov. 21, 1946, staff gages at several sites within half a mile of present site at various datums.

Average discharge.--9 years (1944-53), 79.9 cfs.

Extremes.--Maximum discharge during year, 3,820 cfs Jan. 18 (gage height, 9.48 ft), from rating curve extended above 2,100 cfs as explained below; minimum, 1.7 cfs Oct. 2, 9, 10, 16, 17.
1913, 1943-53: Maximum discharge, 4,020 cfs Oct. 29, 1950 (gage height, 9.72 ft), from rating curve extended above 2,100 cfs on basis of slope-area determinations at gage heights 8.29 and 9.72 ft; minimum observed, 0.3 cfs July 16, 17, 1944.

Remarks.--Records good. Several small diversions above station for irrigation. No regulation.

Revisions (water years).--WSP 1184: 1948.

Rating table, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second) (Shifting-control method used Nov. 11, Nov. 19 to Dec. 4, Dec. 6)

0.9	1.2	2.0	64
1.0	2.4	2.5	130
1.1	4.2	3.0	230
1.2	6.8	4.0	515
1.3	10	5.0	910
1.5	21	8.2	2,870

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.9	3.1	91	165	116	50	75	127	70	19	5.5	4.7
2	1.9	2.9	112	141	116	*47	71	94	60	19	4.5	4.5
3	1.9	2.8	81	123	320	44	68	84	54	17	4.7	4.0
4	2.0	2.8	264	107	302	42	65	73	48	16	4.7	4.0
5	2.2	2.8	254	94	252	39	63	64	46	14	5.5	3.8
6	1.9	2.8	473	85	248	37	58	57	49	14	5.5	3.7
7	1.9	3.1	952	344	226	36	55	62	49	13	5.0	3.1
8	2.0	3.1	361	1,140	226	35	52	61	45	13	5.0	3.1
9	1.8	3.3	197	1,350	185	35	47	54	64	11	4.7	3.5
10	1.8	3.3	*876	452	149	43	45	50	62	11	4.5	3.7
11	1.9	*3.3	358	288	118	47	43	47	56	10	4.2	3.8
12	1.9	5.2	230	473	101	89	40	44	53	10	4.0	3.8
13	2.0	24	169	856	90	78	38	40	49	9.6	3.5	3.7
14	2.0	32	120	564	85	70	36	40	42	9.6	*3.1	3.7
15	1.9	14	94	325	76	64	34	37	39	9.2	3.1	3.5
16	1.8	8.2	93	498	71	86	40	35	37	9.2	3.1	3.3
17	1.9	6.3	72	1,260	92	125	54	33	33	9.2	3.3	2.9
18	2.0	5.5	64	2,860	125	222	52	32	30	8.6	3.3	2.6
19	2.3	5.5	59	996	110	300	50	62	30	7.5	3.5	2.4
20	2.2	5.5	52	1,870	97	273	47	54	28	7.5	3.5	2.4
21	2.3	5.5	47	628	88	278	44	175	26	7.8	3.5	2.6
22	2.4	5.5	43	340	82	234	41	203	24	7.5	3.7	2.9
23	2.4	5.5	42	234	74	209	37	189	*23	7.5	3.3	*3.7
24	2.8	5.5	41	185	70	224	34	169	22	7.5	3.5	3.5
25	2.6	5.5	42	165	63	195	33	132	21	7.5	3.8	3.3
26	2.8	5.5	51	181	58	151	39	153	21	7.2	12	3.1
27	2.8	5.2	123	173	54	127	130	189	20	7.2	6.8	3.1
28	2.8	5.2	112	149	52	113	113	157	19	7.2	5.8	3.1
29	2.9	5.0	149	132	-	98	149	118	19	6.8	7.2	3.7
30	3.1	6.0	*504	128	-	89	*171	90	19	6.5	6.0	3.8
31	3.1	-	250	120	-	81	-	80	-	6.3	5.2	-
Total	69.2	193.9	6,376	16,426	3,646	3,561	1,824	2,805	1,158	316.4	145.0	103.0
Mean	2.23	6.46	206	530	130	115	60.8	90.5	38.6	10.2	4.68	3.43
Cfsm	0.072	0.209	6.67	17.2	4.21	3.72	1.97	2.93	1.25	0.330	0.151	0.111
In.	0.08	0.23	7.67	19.77	4.39	4.29	2.20	3.38	1.39	0.38	0.17	0.12
Ac-ft	137	385	12,650	32,580	7,230	7,060	3,620	5,560	2,300	628	288	204

Calendar year 1952: Max 1,750 Min 1.0 Mean 82.4 Cfsm 2.67 In. 36.31 Ac-ft 59,840
Water year 1952-53: Max 2,860 Min 1.8 Mean 100 Cfsm 3.24 In. 44.07 Ac-ft 72,640

Peak discharge (base, 900 cfs).--Dec. 7 (2:30 a.m.) 1,550 cfs (6.16 ft); Dec. 10 (9:30 a.m.) 1,970 cfs (6.87 ft); Jan. 9 (1:30 a.m.) 2,270 cfs (7.34 ft); Jan. 13 (10:30 a.m.) 1,080 cfs (5.35 ft); Jan. 18 (2 p.m.) 3,820 cfs (9.48 ft).

* Discharge measurement made on this day.

Grave Creek at Pease Bridge, near Placer, Oreg.

Location.--Lat 42°38'40", long. 123°12'20", in NW¼SW¼ sec. 5, T. 34 S., R. 4 W., on left bank 100 ft downstream from Pease Bridge, 1 mile upstream from Boulder Creek, and 5½ miles northeast of Placer.

Drainage area.--22 sq mi, approximately.

Records available.--October 1945 to September 1953 in reports of Geological Survey. September 1940 to September 1941 in reports of State engineer; October 1941 to September 1945 in files of State engineer.

Gage.--Water-stage recorder. Datum of gage is 2,384.1 ft above mean sea level, datum of 1929. Prior to Aug. 22, 1947, water-stage recorder at site 100 ft upstream at same datum.

Average discharge.--8 years (1945-53), 62.2 cfs.

Extremes.--Maximum discharge during year, 2,890 cfs Jan. 18 (gage height, 6.28 ft); from rating curve extended above 830 cfs as explained below; minimum, 1.4 cfs for many days in October.

1940-53: Maximum discharge, 3,550 cfs Oct. 29, 1950 (gage height, 6.95 ft), from rating curve extended above 830 cfs on basis of slope-area determination at gage height 5.73 ft; minimum, 0.3 cfs Sept. 13, 1944, Aug. 16-27, 1946, Aug. 18, 21, 1950.

Remarks.--Records good. One small diversions above station. Prior to 1945, Columbia upper ditch diverted water about 2 miles above station (bypassing station).

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
0.78	1.2	1.7	65	1.5	1.5	2.4	115
.8	1.6	2.0	121	1.6	5.6	2.7	220
.9	4.0	2.5	260	1.7	12	3.0	360
1.1	10	3.0	445	1.9	28	4.0	1,000
1.3	21	3.5	690	2.1	52	5.0	1,770
1.5	39	4.1	1,080				

Discnarge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.6	1.6	28	83	156	75	66	82	108	17	5.6	4.6
2	1.6	1.6	20	100	145	64	64	71	86	16	5.1	4.1
3	1.4	*1.6	14	126	373	57	64	64	71	14	4.1	4.1
4	1.6	1.8	54	106	325	52	64	60	60	14	4.1	3.6
5	1.6	1.8	57	96	388	51	66	59	59	14	4.1	3.6
6	1.6	1.8	34	83	360	49	62	*55	84	12	4.6	4.1
7	1.6	1.8	110	172	315	51	55	52	121	12	4.1	3.6
8	1.6	1.8	64	609	288	55	48	48	121	12	4.1	3.2
9	1.6	1.8	38	1,080	196	60	43	43	108	11	4.1	2.8
10	1.6	2.0	282	391	145	66	39	39	86	10	*4.1	2.4
11	1.6	2.2	*166	340	110	57	36	36	71	10	3.6	2.4
12	1.6	3.7	158	623	90	55	34	35	64	9.6	3.2	2.4
13	1.6	11	128	571	80	51	32	34	55	9.6	3.2	2.1
14	1.4	16	98	344	73	47	31	36	48	9.6	2.8	2.1
15	1.4	9.8	81	227	66	46	31	34	43	9.0	2.8	2.1
16	1.4	7.7	73	316	62	*55	36	32	39	8.4	2.8	1.8
17	1.4	5.8	67	639	128	48	43	31	36	8.4	2.8	2.1
18	1.4	4.9	57	1,730	148	54	42	38	32	7.8	2.8	1.8
19	1.4	4.6	47	*692	108	60	48	84	30	7.8	2.4	1.8
20	1.4	4.6	45	846	88	60	57	80	29	7.2	2.4	1.8
21	1.4	4.3	40	454	75	57	64	110	26	7.2	2.4	1.8
22	1.4	4.0	41	288	69	75	64	110	25	6.6	2.4	2.1
23	1.4	3.4	39	200	64	112	57	152	24	6.6	2.4	2.1
24	1.4	3.2	35	152	60	212	49	159	23	6.6	2.8	1.8
25	1.4	3.0	32	130	57	208	47	118	*22	6.6	3.2	1.8
26	1.4	3.0	32	110	59	152	47	139	20	6.6	17	1.8
27	1.4	2.7	39	90	67	121	90	176	19	6.1	10	1.8
28	1.4	2.7	34	80	80	110	102	180	19	6.1	7.2	2.1
29	1.4	2.7	50	82	-	92	90	156	20	5.6	7.8	*2.4
30	1.4	3.2	168	112	-	82	92	118	18	5.6	6.6	2.4
31	1.6	-	108	127	-	73	-	108	-	5.1	5.6	-
Total	46.0	120.1	2,239	10,999	4,175	2,407	1,663	2,539	1,567	288.1	140.2	76.6
Mean	1.48	4.00	72.2	355	149	77.6	55.4	81.9	52.2	9.29	4.52	2.55
Cfsm	0.067	0.182	3.28	16.1	6.77	3.53	2.52	3.72	2.37	0.422	0.205	0.116
In.	0.08	0.20	3.78	18.59	7.06	4.07	2.81	4.29	2.65	0.49	0.24	0.13
Ac-ft	91	238	4,440	21,820	8,280	4,770	3,300	5,040	3,110	571	278	152

Calendar year 1952: Max 810 Min 1.2 Mean 57.4 Cfsm 2.61 In. 35.48 Ac-ft 41,630
Water year 1952-53: Max 1,730 Min 1.4 Mean 71.9 Cfsm 3.27 In. 44.39 Ac-ft 52,090

Peak discharge (base, 650 cfs).--Jan. 9 (4 a.m.) 1,890 cfs (5.15 ft); Jan. 12 (7 p.m.) 792 cfs (3.67 ft); Jan. 18 (2 p.m.) 2,890 cfs (6.28 ft).

* Discharge measurement made on this day.

East Fork Illinois River near Takilma, Oreg.

Location.--Lat 42°00'40", long. 123°37'30" (revised), in SE¼ sec. 10, T. 41 S., R. 8 W., on right bank 500 ft upstream from county road bridge, a quarter of a mile upstream from Long Gulch, and 3 miles south of Takilma.

Drainage area.--42.6 sq mi.

Records available.--October 1945 to September 1953 in reports of Geological Survey. October 1941 to September 1945 in files of State engineer.

Gage.--Water-stage recorder. Datum of gage is 1,746.6 ft above mean sea level (Bureau of Reclamation benchmark). Prior to Oct. 31, 1946, staff gages at nearby sites at different datums. Oct. 31, 1946, to May 13, 1949, staff gage at same site and datum.

Average discharge.--12 years (1941-53), 184 cfs.

Extremes.--Maximum discharge during year, 6,280 cfs Jan. 18 (gage height, 8.56 ft); minimum, 7.1 cfs Nov. 5.

1941-53: Maximum discharge, 6,750 cfs (revised) Oct. 29, 1950 (gage height, 8.75 ft); minimum observed, 5.2 cfs Sept. 24-29, 1944.

Revisions.--The maximum discharge for water year 1951 has been revised to 6,750 cfs Oct. 29, 1950 (gage height, 8.75 ft), superseding figure published in WSP 1137E and 1218.

Remarks.--Records good. No regulation. Esterly Upper Canal and Osgood Canal diverted water around station prior to 1942. Occasional small diversions above station during summer months.

Revisions (water years).--WSP 1184: 1948. The figures of peak discharge for the water year 1951, superseding those published in WSP 1137E and 1218, have been revised as listed below:

Revised peak discharge.--1950-51: Oct. 29 (5 a.m.) 6,750 cfs (8.75 ft); Dec. 3 (6 p.m.) 6,670 cfs (8.72 ft).

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Jan. 19 to Feb. 2)

Oct. 1 to Feb. 2				Feb. 3 to Sept. 30			
0.5	6.3	3.0	275	0.7	10	2.5	188
.7	12	4.0	610	1.0	20	3.0	299
1.0	22	5.0	1,130	1.4	44	4.0	660
1.3	36	6.0	2,020	2.0	108	5.0	1,220
1.6	59	7.0	3,260				
2.0	100	8.1	5,220				
2.5	170						

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.5	8.5	40	234	242	99	177	*299	289	100	20	19
2	8.2	8.5	64	378	252	93	175	261	251	111	20	18
3	8.2	8.5	36	298	1,130	88	199	242	227	115	19	17
4	7.9	8.2	130	230	830	83	209	289	211	109	20	16
5	7.6	7.6	147	196	840	81	221	362	219	104	20	16
6	7.9	7.4	281	176	845	81	213	356	271	99	20	16
7	7.6	7.4	875	562	765	81	186	326	433	90	19	16
8	7.9	7.4	303	1,540	720	87	158	281	385	79	19	16
9	8.5	7.4	149	3,190	491	99	139	245	321	72	18	15
10	8.7	7.9	673	940	356	122	122	213	289	64	18	15
11	8.5	*8.5	486	744	273	125	109	198	256	64	18	14
12	7.9	14	390	1,590	227	148	102	196	266	62	18	14
13	7.9	36	275	1,530	199	131	100	205	263	56	*18	14
14	7.9	38	202	870	184	121	99	227	281	54	18	13
15	7.6	19	154	538	168	114	103	207	289	51	18	13
16	7.4	15	131	1,180	160	136	147	184	278	46	18	13
17	7.6	13	116	4,190	198	140	245	196	286	42	18	13
18	8.5	12	99	5,180	205	165	229	282	263	42	17	13
19	9.3	14	89	2,030	181	*192	229	655	221	36	17	13
20	9.0	14	77	2,470	162	175	283	480	188	33	17	12
21	8.7	13	78	1,110	148	190	375	510	172	32	17	13
22	8.5	12	102	*658	136	201	422	429	*167	31	16	13
23	8.2	11	98	455	122	242	362	412	156	29	16	*13
24	8.7	10	84	339	116	356	291	378	147	27	16	13
25	9.0	10	77	292	105	350	294	321	140	25	17	13
26	8.7	10	88	248	100	281	402	391	136	25	37	12
27	8.2	10	137	208	99	245	970	408	126	22	25	12
28	7.9	10	104	186	103	234	533	366	114	23	22	13
29	8.7	10	162	182	-	201	422	391	105	22	24	14
30	9.0	10	*654	180	-	183	362	369	98	22	22	15
31	8.7	-	324	188	-	186	-	326	-	21	19	-
Total	256.9	368.3	6,625	32,112	9,357	5,030	7,878	10,005	6,848	1,708	601	427
Mean	8.29	12.3	214	1,036	334	162	263	323	228	55.1	19.4	14.2
Cfsm	0.195	0.289	5.02	24.3	7.84	3.80	6.17	7.58	5.35	1.29	0.455	0.333
In.	0.22	0.32	5.78	28.03	8.17	4.39	6.88	8.73	5.98	1.49	0.52	0.37
Ac-ft	510	731	13,140	63,690	18,560	9,980	15,630	19,840	13,580	3,390	1,190	847

Calendar year 1952: Max 2,500 Min 7.4 Mean 173 Cfsm 4.06 In. 55.14 Ac-ft 125,300
Water year 1952-53: Max 5,180 Min 7.4 Mean 223 Cfsm 5.23 In. 70.88 Ac-ft 161,100

Peak discharge (base, 2,500 cfs).--Jan. 9 (4:30 a.m.) 5,070 cfs (8.03 ft); Jan. 18 (2 p.m.) 6,280 cfs (8.56 ft).

* Discharge measurement made on this day.

Althouse Creek near Holland, Oreg.

Location.--Lat 42°06'00", long. 123°31'30", in SE¼ sec. 9, T. 40 S., R. 7 W., on right bank half a mile upstream from Carter Gulch and 2 miles southeast of Holland.
Drainage area.--23.8 sq mi.
Records available.--October 1946 to September 1953 (discontinued). August 1944 to January 1945 in files of State engineer (fragmentary).
Gage.--Water-stage recorder. Datum of gage is 1,754.54 ft above mean sea level (Bureau of Reclamation benchmark). Aug. 22, 1944, to Jan. 25, 1945, water-stage recorder at site 400 ft downstream at different datum.
Average discharge.--7 years (1946-53), 71.5 cfs.
Extremes.--Maximum discharge during year, 2,680 cfs Jan. 18 (gage height, 6.50 ft), from rating curve extended above 340 cfs on basis of slope-area determinations at gage heights 5.14 and 5.96 ft; minimum, 5.0 cfs Nov. 6-10.
1944-45, 1946-53: Maximum discharge, that of Jan. 18, 1953; minimum, 3.2 cfs Sept. 23-25, 1947.
Remarks.--Records good except those for period of shifting control, which are fair. Slight regulation from mining operations above station. Water used for placer mining is returned to creek above station.
Revisions.--Revised figures of discharge, in cubic feet per second, for a period of ice effect in the water year 1949, superseding figures published in WSP 1154, are given herewith:

Date	Discharge	Date	Discharge	Date	Discharge
1949		1949-Con.		1949-Con.	
Jan. 6	34	Jan. 13	18	Jan. 20	12
7	31	14	17	21	13
8	28	15	16	22	12
9	25	16	15	23	11
10	23	17	14	24	10
11	21	18	13		
12	20	19	12		

Month	Cfs-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
January 1949.....	685	75	9	22.1	0.929	1.07	1,360
Water year 1948-49.....	18,418.3	486	4.5	50.5	2.12	28.78	36,530
Calendar year 1949.....	15,678.1	486	4.5	43.0	1.81	24.49	31,100

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.5	5.6	18	76	132	65	84	*141	134	58	24	16
2	6.2	5.6	26	74	134	63	84	125	121	58	23	15
3	6.2	5.6	17	67	297	61	88	118	113	57	23	14
4	6.2	5.3	46	59	287	60	89	126	108	56	22	13
5	6.2	5.3	45	56	260	58	92	143	105	54	21	13
6	6.2	5.0	84	52	252	58	92	151	114	51	20	13
7	6.2	5.0	274	133	281	58	88	147	132	50	19	13
8	6.2	5.0	109	301	284	62	83	128	116	48	18	13
9	6.2	5.0	57	590	232	65	77	111	113	45	17	12
10	6.2	5.3	168	250	192	74	73	100	106	44	16	11
11	5.9	5.9	111	207	162	76	70	98	101	42	14	11
12	5.6	*9.7	84	366	139	82	66	95	109	41	13	10
13	5.6	19	66	550	123	74	66	97	105	40	*13	9.4
14	5.6	19	52	368	114	72	65	105	101	40	12	9.4
15	5.6	11	41	222	105	69	65	98	103	39	12	7.8
16	5.6	9.2	36	324	98	74	74	95	103	38	12	7.8
17	5.6	8.4	31	842	103	72	92	98	103	36	11	7.8
18	5.9	8.4	28	2,090	100	79	90	112	100	35	10	7.8
19	6.2	8.8	25	1,060	92	*84	94	162	94	34	10	7.0
20	5.9	8.8	24	992	88	86	108	147	88	34	9.4	7.0
21	5.9	8.4	22	522	83	90	130	192	83	34	9.4	7.8
22	5.6	8.0	26	*340	79	92	153	175	*80	33	8.6	*9.4
23	5.6	7.6	25	263	76	100	147	182	77	33	7.8	9.4
24	5.9	7.6	23	213	73	130	138	170	73	32	7.8	7.8
25	5.9	7.2	22	192	70	132	141	151	72	31	9.4	6.3
26	5.6	7.2	25	170	67	118	160	200	69	30	31	6.3
27	5.3	7.2	40	143	67	106	302	200	66	29	21	6.3
28	5.3	7.6	34	128	67	101	224	175	63	28	19	10
29	5.6	7.2	45	118	-	94	192	164	62	28	21	10
30	5.6	7.6	*225	111	-	89	168	151	60	27	18	11
31	5.6	-	109	113	-	88	-	153	-	26	17	-
Total	181.7	236.5	1,948	10,992	4,057	2,532	3,395	4,300	2,874	1,231	489.4	302.3
Mean	5.86	7.88	62.8	355	145	81.7	113	139	95.8	39.7	15.8	10.1
Cfsm	0.246	0.331	2.64	14.9	6.09	3.43	4.75	5.84	4.03	1.67	0.664	0.424
In.	0.28	0.37	3.04	17.18	6.34	3.96	5.31	6.72	4.49	1.92	0.76	0.47
Ac-ft	360	469	3,860	21,800	8,050	5,020	6,730	8,530	5,700	2,440	971	600

Calendar year 1952: Max 780 Min 5.0 Mean 71.7 Cfsm 3.01 In. 41.01 Ac-ft 52,060
Water year 1952-53: Max 2,090 Min 5.0 Mean 89.1 Cfsm 3.74 In. 50.84 Ac-ft 64,530

Peak discharge (base, 500 cfs).--Jan. 9 (5 a.m.) 850 cfs (4.30 ft); Jan. 13 (1 p.m.) 668 cfs (4.03 ft); Jan. 18 (1:30 p.m.) 2,680 cfs (6.50 ft).
* Discharge measurement made on this day.
Note.--Shifting-control method used July 20 to Sept. 30.

Sucker Creek near Holland, Oreg.

Location.--Lat 42°09'00", long. 123°27'50" (revised), in NE¼ sec. 25, T. 39 S., R. 7 W., on right bank 1 mile downstream from Grayback Creek and 4.3 miles northeast of Holland.

Drainage area.--76 sq mi, approximately.

Records available.--October 1945 to September 1953 in reports of Geological Survey. April 1940 to August 1941 in reports of State engineer and September 1941 to September 1945 in files of State engineer.

Gage.--Water-stage recorder. Datum of gage is 1,777.22 ft above mean sea level (Bureau of Reclamation benchmark). Prior to Sept. 16, 1947, staff gages at several sites within half a mile of present site at various datums. Sept. 16, 1947, to Sept. 19, 1952, staff gage at site 280 ft upstream at datum 0.62 ft higher.

Average discharge.--12 years (1941-53), 204 cfs.

Extremes.--Maximum discharge during year, 6,580 cfs Jan. 18 (gage height, 7.75 ft, from recorded range in stage), from rating curve extended above 1,300 cfs on basis of shape of previous curve defined to 5,100 cfs by a slope-area measurement; minimum, 19 cfs Oct. 21.
1940-53: Maximum discharge, that of Jan. 18, 1953; minimum, 19 cfs Sept. 27, 28, 1947, Oct. 21, 1952.

Remarks.--Records good except those for periods of no gage-height record, which are fair. Grayback Canal diverts water from Grayback Creek above station for domestic use and irrigation; most of return flow from this canal enters creek above station. No regulation.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
1.3	23	3.0	435	1.7	34	4.0	980
1.6	53	4.0	990	2.0	76	5.0	1,900
2.0	117	5.1	2,010	2.4	161	6.0	3,200
2.5	247			3.0	395	6.8	4,530
				3.5	650		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	27	a60	148	368	176	237	*368	418	233	70	49
2	28	27	a90	140	364	167	233	350	386	237	70	46
3	27	27	a80	130	868	161	241	336	372	233	70	46
4	26	26	a140	117	812	156	245	368	364	229	68	45
5	26	26	a150	113	728	151	257	422	364	218	68	45
6	26	25	a230	109	740	146	257	436	408	211	68	44
7	26	25	a440	202	752	146	257	426	460	197	63	42
8	26	25	a280	482	740	151	241	377	404	178	62	42
9	30	25	a140	1,040	620	156	229	341	422	167	60	41
10	28	25	*a300	543	525	176	214	318	400	156	59	40
11	27	28	232	444	455	176	200	301	390	151	56	40
12	26	*38	175	754	413	178	190	301	395	144	53	40
13	26	56	138	a900	377	164	184	310	372	138	52	39
14	26	57	113	a650	354	161	176	336	377	132	*53	39
15	25	40	95	a500	323	158	176	305	404	127	54	38
16	25	35	84	a900	293	167	190	297	413	121	53	36
17	25	32	78	a2,000	310	167	225	318	431	116	52	36
18	27	32	68	a4,400	293	181	225	368	418	110	50	36
19	28	a34	65	a2,400	273	197	233	520	382	108	49	35
20	26	a38	62	2,360	261	*225	269	440	354	100	49	35
21	23	a36	58	*1,440	241	237	328	465	341	96	47	36
22	23	a36	63	959	229	257	377	450	*332	94	46	*38
23	23	a36	61	722	211	285	372	460	328	90	45	38
24	24	a36	58	580	194	382	350	440	310	89	45	36
25	25	a34	57	515	190	413	364	404	297	87	46	34
26	25	a34	64	455	184	368	431	465	289	83	80	34
27	25	a36	96	400	181	328	770	505	269	80	57	34
28	25	a38	81	364	181	310	540	480	257	78	53	40
29	26	a36	108	341	-	281	455	470	245	76	60	39
30	28	a40	*355	328	-	261	400	450	233	74	54	41
31	27	-	208	328	-	249	-	431	-	71	50	-
Total	806	1,010	4,229	24,764	11,480	6,731	8,866	12,258	10,835	4,224	1,762	1,184
Mean	26.0	33.7	136	799	410	217	296	395	361	136	56.8	39.5
Cfsm	0.342	0.443	1.79	10.5	5.39	2.86	3.89	5.20	4.75	1.79	0.747	0.520
In.	0.39	0.49	2.07	12.12	5.62	3.29	4.34	6.00	5.30	2.07	0.86	0.58
Ac-ft	1,600	2,000	8,390	49,120	22,770	13,350	17,590	24,310	21,490	8,380	3,490	2,350

Calendar year 1952: Max 2,120 Min 23 Mean 235 Cfsm 3.09 In. 42.00 Ac-ft 170,300
Water year 1952-53: Max 4,400 Min 23 Mean 242 Cfsm 3.18 In. 43.13 Ac-ft 174,800

Peak discharge (base, 1,400 cfs).--Jan. 9 (6:30 a.m.) 1,420 cfs (4.52 ft); Jan. 18 (time unknown) 6,580 cfs (7.75 ft).

* Discharge measurement made on this day.

a No gage-height record; discharge estimated on basis of recorded range in stage, weather records, and records for Althouse Creek near Holland.

West Fork Illinois River near O'Brien, Oreg.

Location.--Lat 42°03'50", long. 123°43'00", in NW¼ sec. 25, T. 40 S., R. 9 W., on left bank 800 ft upstream from bridge on U. S. Highway 199 and half a mile southwest of O'Brien.

Drainage area.--48.6 sq mi (revised). Drainage area for sites used 1930, February 1943 to October 1946 revised to 45.0 sq mi.

Records available.--October 1946 to September 1953 in reports of Geological Survey. February to November 1930, February 1943 to September 1945 in files of State engineer, and October 1945 to October 1946, in reports of Geological Survey, at sites 1½ miles upstream; records not equivalent owing to diversion and inflow.

Gage.--Staff gage read one or more times daily. Datum of gage is 1,404.37 ft above mean sea level, datum of 1929.

Average discharge.--7 years (1946-53), 254 cfs.

Extremes.--Maximum discharge during year, 11,800 cfs Jan. 18 (gage height, 11.7 ft, from floodmark), from rating curve extended above 1,000 cfs on basis of slope-area determination at gage height 12.96 ft and shape of previous curve defined to 7,300 cfs; minimum observed, 4.6 cfs Oct. 16, 17.

1946-53: Maximum discharge, 14,200 cfs Oct. 28, 1950 (gage height, 12.96 ft, from floodmark), from rating curve extended above 7,200 cfs on basis of slope-area determination of peak flow; minimum, 2.1 cfs Sept. 16, 17, 1945.

Remarks.--Records fair except those for period of backwater from diversion dam, which are poor. Diversions above station for irrigation of about 280 acres of which 140 acres are below station. An interbasin diversion from Rough and Ready Creek irrigates 16 acres above station. Since Oct. 1, 1950, a right exists to divert 2 cfs to log pond upstream. No regulation.

Rating tables, water year 1952-53, except period of backwater from diversion dam (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
-0.2	2.7	1.0	150	-1.3	10	1.0	410
-.1	4.9	1.5	285	-1.0	25	2.0	840
.0	8.5	2.0	475	-.8	39	4.0	2,120
.1	14	3.0	965	-.5	69	7.0	4,880
.2	21	5.0	2,340	0.0	145	10.5	9,650
.4	42	8.0	5,480	.5	250		
.7	87	9.0	6,800				

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5.2	6.5	106	498	272	112	208	494	171	61	23	14
2	5.2	7.7	352	625	275	104	208	396	149	59	23	14
3	4.9	8.1	270	451	1,090	98	195	305	135	62	20	13
4	4.9	8.1	498	334	768	94	182	240	125	60	20	13
5	4.9	8.1	615	267	1,210	91	182	203	118	58	19	13
6	4.9	7.3	1,200	243	1,030	86	174	174	135	56	*18	13
7	4.9	7.3	3,140	1,140	835	82	152	238	255	54	16	12
8	4.9	6.5	1,260	2,790	805	79	138	386	293	54	16	12
9	5.2	6.5	615	3,560	522	79	128	326	221	52	16	12
10	4.9	5.8	2,520	1,080	375	114	135	255	203	48	14	12
11	4.9	*8.5	960	690	*299	161	112	217	178	46	14	11
12	5.2	21	625	1,230	255	368	106	186	167	44	14	11
13	4.9	78	403	2,280	226	278	109	163	152	44	13	11
14	4.9	96	299	1,430	205	224	106	152	138	41	14	11
15	4.9	56	234	785	184	182	109	135	131	43	13	11
16	4.6	35	208	2,020	180	350	161	122	122	41	14	11
17	4.6	23	190	6,660	430	378	709	112	118	38	13	11
18	4.9	19	168	9,480	510	686	426	128	109	38	14	10
19	5.5	16	178	2,840	358	*745	275	368	106	36	14	10
20	5.2	14	160	3,850	270	598	236	326	91	36	14	11
21	5.5	13	165	1,760	226	680	182	795	88	36	13	10
22	5.5	12	240	*915	197	709	167	691	*82	34	13	*10
23	5.5	12	218	586	178	624	145	673	77	34	13	10
24	5.8	11	188	454	163	628	135	570	76	34	12	10
25	5.8	11	172	482	152	578	131	418	73	33	14	11
26	5.8	10	240	602	131	442	163	396	70	33	33	11
27	5.8	10	455	478	123	364	590	434	69	30	21	12
28	5.8	10	338	378	120	316	410	340	65	30	19	14
29	6.5	10	740	336	-	288	506	265	64	29	24	14
30	6.5	10	*1,400	312	-	233	*570	221	62	28	18	14
31	6.5	-	595	287	-	226	-	195	-	24	16	-
Total	164.5	547.4	18,752	48,843	11,389	9,957	7,050	9,924	3,843	1,316	518	352
Mean	5.31	18.2	605	1,576	407	321	235	320	128	42.5	16.7	11.7
Ac-ft	326	1,090	37,190	96,880	22,590	19,750	13,980	19,680	7,620	2,610	1,030	698

Calendar year 1952: Max 3,860 Min 4.6 Mean 215 Ac-ft 156,400
Water year 1952-53: Max 9,480 Min 4.6 Mean 306 Ac-ft 223,400

* Discharge measurement made on this day.
Note.--Backwater from diversion dam July 8 to Sept. 30.

Illinois River at Kerby, Oreg.

Location.--Lat 42°12'00", long. 123°39'20", in NW¼ sec. 9, T. 39 S., R. 8 W., on right bank at Finch Bridge and half a mile west of Kerby.

Drainage area.--364 sq mi.

Records available.--March 1926 to September 1953.

Gage.--Staff gage read once or twice daily. Datum of gage is 1,234.00 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to May 9, 1928, staff gage at site half a mile upstream at different datums. May 9, 1928, to Nov. 2, 1934, staff gage at present site at different datums. Nov. 3, 1934, to Sept. 30, 1950, water-stage recorder at site 1 mile downstream at datum 18.76 ft lower than present datum.

Average discharge.--27 years, 1,152 cfs.

Extremes.--Maximum discharge during year, 46,800 cfs Jan. 18 (gage height, 13.2 ft, from floodmark), from rating curve extended above 9,700 cfs on basis of slope-area determination at gage height 13.7 ft; minimum, 14 cfs Oct. 1, 2.
1926-53: Maximum discharge, 52,000 cfs Feb. 20, 1927 (gage height, 19.6 ft, site and datum then in use), from rating curve extended above 26,000 cfs on basis of slope-area determination at gage height 19.2 ft; minimum, 13 cfs Sept. 10-15, 1934.

Remarks.--Records fair except those for periods of doubtful or no gage-height records which are poor. Diversions for irrigation of about 5,500 acres above station. Some diversions for mining during winter months. No regulation.

Revisions (water years).--WSP 864: 1936-37. WSP 1184: 1927(M), 1942(M), 1943, 1946(M), 1948. WSP 1218: Drainage area.

Rating tables, water year 1952-53 (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Apr. 29				Apr. 30 to Sept. 30	
0.5	12	3.0	910	2.1	32
.9	28	3.5	1,480	2.3	89
1.2	47	4.0	2,280	2.5	175
1.5	72	5.0	4,330	2.7	307
1.8	122	7.0	10,800	3.0	590
2.0	185	10.0	25,600	4.0	1,880
2.5	480	12.5	41,600	5.0	3,850

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	46	300	1,980	2,170	1,020	1,400	2,210	1,660	590	119	119
2	14	44	900	2,940	2,020	970	1,360	*1,940	1,480	569	119	112
3	20	48	800	2,120	5,630	950	1,440	1,720	1,370	569	112	104
4	20	46	1,400	1,580	4,720	920	1,380	1,620	1,290	549	112	104
5	20	46	1,870	1,330	5,080	890	1,430	1,620	1,260	528	112	89
6	25	46	3,200	970	5,050	870	1,390	1,590	1,350	487	*112	83
7	25	45	14,400	3,660	4,170	950	1,300	1,780	1,800	468	112	83
8	25	44	6,340	10,400	4,770	950	1,220	2,140	1,940	449	119	77
9	25	44	8,790	18,700	3,430	950	1,140	1,780	1,760	410	104	77
10	30	44	7,850	5,780	2,740	960	1,090	1,580	1,590	374	97	80
11	30	44	4,240	3,880	2,260	1,120	1,030	1,420	1,460	341	97	64
12	30	*64	3,080	6,410	1,980	1,800	990	1,320	1,410	307	89	58
13	30	200	2,390	10,100	1,720	1,450	1,030	1,240	1,370	278	86	58
14	35	300	2,100	7,150	1,640	1,330	1,120	1,270	1,310	264	86	58
15	35	250	1,600	3,990	1,510	1,210	1,130	1,160	1,290	264	83	55
16	35	180	1,400	5,660	1,390	1,560	1,250	1,090	1,260	249	83	53
17	35	130	1,300	22,200	1,820	1,770	2,590	1,040	1,240	235	89	48
18	40	110	1,200	40,200	2,460	*2,140	2,320	1,190	1,220	223	80	42
19	40	110	1,100	18,200	1,900	3,160	1,880	2,790	1,120	223	74	42
20	40	120	1,000	21,200	1,650	2,710	1,820	2,140	1,010	211	70	42
21	45	110	1,100	*9,770	1,490	2,820	1,960	3,830	952	187	70	42
22	45	100	1,400	5,630	1,360	2,710	2,070	3,520	904	175	70	58
23	57	95	1,300	4,080	1,240	2,590	1,930	3,610	*880	156	64	*61
24	43	90	1,100	2,800	1,210	2,820	1,700	3,100	808	146	64	58
25	*43	85	1,000	3,040	1,160	2,880	1,590	2,490	760	156	61	55
26	48	85	1,400	3,340	1,100	2,350	1,770	2,850	724	146	104	53
27	47	80	2,300	2,800	1,080	2,070	4,550	3,230	712	137	156	53
28	49	85	1,900	2,350	1,050	1,910	3,320	2,620	667	127	127	42
29	48	80	*3,040	2,190	-	1,710	2,900	2,310	623	119	146	42
30	46	85	6,220	2,170	-	1,550	2,580	2,020	580	127	165	53
31	46	-	4,000	2,020	-	1,480	-	1,850	-	119	137	-
Total	1,075	2,856	90,020	228,640	67,800	52,570	52,680	64,070	35,800	9,183	3,119	1,965
Mean	34.7	95.2	2,904	7,375	2,421	1,696	1,756	2,067	1,193	296	101	65.5
Ac-ft	2,130	5,660	178,600	453,500	134,500	104,300	104,500	127,100	71,010	18,210	6,190	3,900

Calendar year 1952: Max 21,700 Min 14 Mean 1,348 Ac-ft 978,400
Water year 1952-53: Max 40,200 Min 14 Mean 1,671 Ac-ft 1,210,000

* Discharge measurement made on this day.
Note.--Doubtful or no gage-height record Oct. 3-22, Nov. 13 to Dec. 4, Dec. 14-28, 31; discharge estimated on basis of records for stations on upstream tributaries.

Deer Creek near Dryden, Oreg.

Location.--Lat 42°15'50", long. 123°27'00", near center of sec. 18, T. 38 S., R. 6 W., on left bank 500 ft downstream from confluence of North and South Forks and 5 miles east of Dryden.

Drainage area.--23 sq mi, approximately.

Records available.--October 1945 to September 1953 in reports of Geological Survey. November 1941 to September 1945 in files of State engineer.

Gage.--Water-stage recorder. Datum of gage is 1,650.10 ft above mean sea level (surveys by Bureau of Reclamation). Prior to Sept. 12, 1946, staff gage at same site at datum 1.26 ft higher.

Average discharge.--11 years (1942-53), 71.7 cfs.

Extremes.--Maximum discharge during year, about 5,000 cfs Jan. 18 (gage height, 7.61 ft, backwater from logs); minimum, 1.2 cfs Oct. 6, 7.
1941-53: Maximum discharge, that of Jan. 18, 1953; maximum gage height, 7.92 ft Oct. 29, 1950; minimum discharge, 0.9 cfs part of each day Sept. 20-24, 1951.

Remarks.--Records fair except those for period of backwater from logs, which are poor. No regulation. One small diversion above station for irrigation.

Rating tables, water year 1952-53, except period of backwater from logs (gage height, in feet, and discharge, in cubic feet per second)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
1.2	1.0	2.3	61	1.3	1.7	3.0	260
1.3	2.0	2.6	109	1.5	7.3	3.5	510
1.4	3.4	3.0	205	1.7	16	4.0	820
1.5	5.8	4.0	560	2.0	37	5.0	1,590
1.7	13	5.0	1,050	2.3	73	6.2	3,030
2.0	31	5.7	1,530	2.6	128		

Discharge, in cubic feet per second, water year October 1952 to September 1953

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	1.9	11	102	179	38	72	100	107	21	6.7	5.5
2	1.4	1.9	18	142	157	36	70	87	89	21	6.7	5.2
3	1.4	2.0	12	113	612	34	73	79	81	20	6.7	4.9
4	1.3	2.0	19	88	455	31	75	83	75	19	6.7	4.6
5	1.3	1.9	28	75	350	28	84	84	72	17	6.4	4.6
6	1.2	1.9	101	69	330	28	76	79	76	17	6.4	4.3
7	1.2	1.9	360	294	305	28	70	78	126	16	6.1	4.0
8	1.3	1.9	107	866	310	28	59	73	124	15	5.8	4.0
9	1.3	1.9	59	1,340	213	28	51	70	149	14	5.5	3.8
10	1.4	1.9	416	460	154	33	45	62	144	13	5.2	3.5
11	1.4	*2.1	205	328	120	32	40	57	118	12	4.9	3.3
12	1.4	3.4	165	717	93	36	37	54	100	12	4.6	3.0
13	1.4	10	113	912	79	35	35	52	87	12	*4.0	3.0
14	1.4	12	86	532	72	34	34	54	76	12	4 0	2.7
15	1.4	6.1	67	324	63	35	35	49	70	11	3.8	2.5
16	1.4	4.2	56	593	58	42	44	47	65	11	3.8	2.5
17	1.4	3.6	49	1,460	86	47	73	46	59	11	3.8	2.2
18	1.5	3.2	41	2,900	102	*59	73	54	54	9.9	3.5	2.2
19	1.9	3.8	36	1,080	81	86	72	154	47	9.9	3.5	2.2
20	1.9	4.2	31	1,280	72	91	79	146	41	9.2	3.5	2.2
21	1.9	3.8	30	654	65	89	91	182	37	8.8	3.5	2.2
22	1.7	3.4	39	320	57	102	98	166	35	8.8	3.5	2.2
23	1.7	3.1	37	*199	54	136	86	192	*33	8.4	3.5	*2.2
24	1.9	2.9	31	146	49	206	72	192	30	8.4	3.5	2.0
25	2.0	2.9	28	126	45	202	67	149	28	8.0	4.0	1.7
26	1.9	2.8	26	122	41	154	66	192	27	8.0	16	1.7
27	1.9	2.8	33	105	39	124	176	213	26	7.7	8.4	1.7
28	1.6	2.8	31	93	39	113	144	185	24	7.3	7.0	2.7
29	1.7	2.8	*61	103	-	94	115	173	23	7.3	11	3.8
30	1.9	2.9	286	126	-	84	*120	151	23	7.0	7.7	3.8
31	1.9	-	138	133	-	75	-	128	-	7.0	6.7	-
Total	48.4	102.0	2,720	15,802	4,280	2,188	2,232	3,431	2,046	369.7	176.4	94.2
Mean	1.56	3.40	87.7	510	153	70.6	74.4	111	68.2	11.9	5.69	3.14
Cfsm	0.068	0.148	3.81	22.2	6.65	3.07	3.23	4.83	2.97	0.517	0.247	0.137
In.	0.08	0.16	4.40	25.55	6.92	3.54	3.61	5.55	3.31	0.60	0.29	0.15
Ac-ft	96	202	5,400	31,340	8,490	4,340	4,430	6,810	4,060	733	350	187

Calendar year 1952: Max 2,110 Min 1.2 Mean 70.4 Cfsm 3.06 In. 41.66 Ac-ft 51,090
Water year 1952-53: Max 2,900 Min 1.2 Mean 91.8 Cfsm 3.99 In. 54.16 Ac-ft 66,440

Peak discharge (base, 930 cfs).--Dec. 10 (9 a.m.) 1,030 cfs (4.97 ft); Jan. 9 (4:30 a.m.) 2,040 cfs (6.29 ft); Jan. 12 (7 p.m.) 1,020 cfs (4.95 ft); Jan. 18 (3 p.m.) about 5,000 cfs (7.61 ft); Feb. 3 (1 p.m.) 953 cfs (4.29 ft).
* Discharge measurement made on this day.
Note.--Backwater from logs Jan. 18-20.

Reservoirs in Rogue River basin, Oreg.

Fish Lake.--Lat 42°23', long. 122°21', in SE¼ sec. 4, T. 37 S., R. 4 E., at reservoir outlet, 14 miles east of Lake Creek Post Office. Drainage area, 17 sq mi, approximately. Records available, December 1915 to September 1953. Staff gage read daily. Datum of gage is 185.4 ft below mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 1, 1921, staff gage on former gate tower at datum 4,799 ft higher. Maximum contents observed during year, 7,730 acre-ft June 20 to July 3, July 5, 6 (elevation, 4,826.50 ft); minimum observed, 3,380 acre-ft Oct. 11 (elevation, 4,814.60 ft). Maximum contents observed during period 1915-53, 8,020 acre-ft June 1, 1943 (elevation, 4,827.19 ft); no usable contents at times.

Reservoir is formed by rock-faced earth dam, completed in fall of 1915; storage began in November 1915. Capacity, 8,150 acre-ft between elevations 4,799 ft (outlet tunnel) and 4,827.5 ft (spillway crest, incomplete). Water is diverted during summer from Fourmile Lake in Klamath River basin through Cascade Canal into Fish Lake.

Emigrant Gap Reservoir.--Lat 42°09'40", long. 122°36'20", in SE¼ sec. 20, T. 39 S., R. 2 E., at Emigrant Gap Dam of Talent Irrigation District on Emigrant Creek, 6 miles southeast of Ashland. Drainage area, 64 sq mi, approximately. Records available, December 1924 to September 1953. Staff gage read one to twelve times each month. Datum of gage is at mean sea level (levels by Talent Irrigation District). Maximum contents observed during year, 8,920 acre-ft Jan. 18 (elevation, 2,175.9 ft, from high-water mark); minimum observed, 227 acre-ft Sept. 28 (elevation, 2,094.0 ft). Maximum contents during period 1924-53, that of Jan. 18, 1953; no usable contents at times.

Reservoir is formed by concrete arch dam, completed in 1924 by Talent Irrigation District; storage began in December 1924. Capacity, 8,340 acre-ft between elevations 2,070 ft (16-inch sluice pipe) and 2,173.5 ft (crest of spillway). Dead storage negligible. Water is used for irrigation of lands near Talent.

Revisions (water years).--WSP 834: 1936. WSP 1064: 1945.

Monthly elevation and contents, water year October 1952 to September 1953

Date	Fish Lake			Emigrant Gap Reservoir		
	Elevation (feet)	Contents (acre-feet)	Change in contents during month (acre-feet)	Elevation (feet)	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	4,815.90	3,810	-	-	a420	-
Oct. 31	4,817.20	4,240	+430	-	a480	+60
Nov. 30	4,819.70	5,110	+870	-	a760	+280
Dec. 31	4,821.80	5,880	+770	-	a2,710	+1,950
Calendar year 1952	-	-	+1,430	-	-	-4,780
Jan. 31	4,823.30	6,460	+580	-	a8,360	+5,650
Feb. 28	4,824.30	6,840	+380	-	a7,910	-450
Mar. 31	4,824.20	6,810	-30	-	a8,360	+450
Apr. 30	4,824.90	7,080	+270	-	a8,290	-70
May 31	4,825.90	7,490	+410	-	a8,470	+180
June 30	4,826.50	7,730	+240	-	a7,600	-870
July 31	4,825.40	7,280	-450	2,148.4	3,860	-3,740
Aug. 31	4,818.40	4,660	-2,620	-	a1,200	-2,660
Sept.30	4,816.70	4,070	-590	-	a227	-973
Water year 1952-53	-	-	+260	-	-	-193

a Interpolated.

Springs in the Walla Walla River basin, Oreg.-Wash.

Ground-water overflow through many springs on the alluvial fan of the Walla Walla River near Milton-Freewater, Oreg., amounts to about 50,000 acre-ft a year. During the irrigation season practically all the overflow is used to water crops on land not served by diversion from the river. A survey made in 1933 listed 57 springs or spring groups in the area, arranged in "inner," "intermediate," and "outer" zones concentric about the apex of the alluvial fan.[1]

The inner zone is 3 to 3½ miles below Milton-Freewater and extends from the vicinity of Nicholas Spring, which is about half a mile east of the Walla Walla River at McCoy Bridge, to springs in the vicinity of Dugger Creek. Within this zone are fully three-fourths of the springs in the Walla Walla basin. The intermediate and outer zones, each of which contains only a few springs, are about 2 miles and 4 miles, respectively, beyond the inner zone.

In order to bring about a more effective use of the available water supply through a better understanding of the relation between surface- and ground-water supplies in the basin, discharge measurements of each of the principal springs and measurements of ground-water levels in representative wells have been made and the results published periodically since 1932.

Discharge measurements, in cubic feet per second, of springs in Walla Walla River basin, Oreg.-Wash., during water year October 1952 to September 1953†

Springs of the inner zone

Date	Spring	Locality	Discharge (cfs)
Nov. 17	Nicholas Spring, Oreg...	NE¼NE¼ sec. 24, T. 6 N., R. 35 E., 150 ft above confluence of spring channel and Walla Walla River.	0.88
Feb. 28	....do.....	....do.....	1.62
Aug. 10	....do.....	....do.....	1.07
Nov. 17	Big Spring Branch (west prong), Oreg.	SE¼NW¼ sec. 24, T. 6 N., R. 35 E., at Ballou residence, 75 ft above bridge on county road.	4.79
Feb. 25	....do.....	....do.....	9.76
May 28	....do.....	....do.....	14.60
Aug. 7	....do.....	....do.....	7.18
Nov. 18	Big Spring Branch (east prong), Oreg.	NE¼SW¼ sec. 24, T. 6 N., R. 35 E., above flow line of small reservoir supplying two diversion pumps.	2.13
Feb. 25	....do.....	....do.....	3.53
Aug. 7	....do.....	....do.....	2.43
Nov. 18	Engle Spring, Oreg.....	NW¼SE¼ sec. 23, T. 6 N., R. 35 E., total flow at diversion dam.	3.46
Feb. 27	....do.....	....do.....	2.54
June 5	....do.....	....do.....	4.13
Aug. 8	....do.....	....do.....	2.80
Nov. 17	Downing Spring, Oreg....	SE¼SW¼ sec. 23, T. 6 N., R. 35 E., at weir, 200 ft below spring orifice.	.44
Feb. 25	....do.....	....do.....	.81
May 28	....do.....	....do.....	2.54
Aug. 5	....do.....	....do.....	2.54
Nov. 17	Haun Spring, Oreg.....	NW¼SE¼ sec. 23, T. 6 N., R. 35 E., at Haun farm, 200 ft above highway crossing.	1.20
Feb. 25	....do.....	....do.....	1.32
May 28	....do.....	....do.....	1.84
Aug. 5	....do.....	....do.....	1.64

Springs of the intermediate and outer zones

Feb. 27	McEvoy Spring, Wash.....	SE¼NW¼ sec. 10, T. 6 N., R. 35 E., at McEvoy farm, 200 ft above Walla Walla Ry.	2.42
June 5	....do.....	....do.....	3.11
Aug. 10	....do.....	....do.....	3.18
Nov. 17	Lewis Spring, Oreg.....	NW¼NW¼ sec. 23, T. 6 N., R. 35 E., below road crossing.	1.82
Feb. 25	....do.....	....do.....	1.79
May 20	....do.....	....do.....	2.29
Aug. 5	....do.....	....do.....	2.69
Nov. 20	Unnamed Spring, Wash....	NW¼NE¼ sec. 16, T. 6 N., R. 35 E., at small diversion structure.	3.08
Feb. 27	....do.....	....do.....	2.20
June 5	....do.....	....do.....	2.97
Aug. 10	....do.....	....do.....	1.74
Feb. 27	East Mud Creek (west prong), Oreg.	SW¼SW¼ sec. 22, T. 6 N., R. 35 E., at two weirs.....	1.09
Aug. 7	....do.....	....do.....	2.06
Feb. 27	East Mud Creek (east prong), Oreg.	SE¼SW¼ sec. 22, T. 6 N., R. 35 E., in diversion ditch, 150 ft below diversion dam.	.69
Aug. 7	....do.....	....do.....	1.13
Nov. 20	East Mud Creek (branch of), Oreg.	SW¼SW¼ sec. 16, T. 6 N., R. 35 E., near Lockwood dwelling.	5.25
Feb. 27	....do.....	....do.....	2.35
June 5	....do.....	....do.....	2.74
Feb. 28	South Mud Creek, Oreg...	SE¼NW¼ sec. 28, T. 6 N., R. 35 E., at Von Der Ahe farm.	1.86
June 5	....do.....	....do.....	3.80

† Measurements by Umatilla County deputy watermaster.

[1] Piper, A. M., Robinson, T. W., and Thomas, H. E., Ground Water in the Walla Walla basin, Oreg.-Wash.: Supreme Court of the United States, October term 1935, State of Washington vs. State of Oregon, transcript of record, p. 132A, Oct. 14, 1935.

Discharge measurements, in cubic feet per second, of springs in Walla Walla River basin, Oreg.-Wash., during water year October 1952 to September 1953--Continued†

Springs of the intermediate and outer zones--Continued

Date	Spring	Locality	Discharge (cfs)
Aug. 7	South Mud Creek, Oreg...	SE¼NW¼ sec. 28, T. 6 N., R. 35 E., at Von Der Ahe farm.	1.94
Nov. 18	Johnson Creek, Oreg.....	SE¼NW¼ sec. 29, T. 6 N., R. 35 E., at two weirs.....	4.02
Feb. 27	....do.....	....do.....	2.04
June 11	....do.....	....do.....	3.01
Aug. 7	....do.....	....do.....	2.39
Nov. 18	Dugger Creek, Oreg.....	NW¼NW¼ sec. 32, T. 6 N., R. 35 E., at two weirs.....	11.59
Feb. 26	....do.....	....do.....	4.20
June 11	....do.....	....do.....	12.93
Aug. 4	....do.....	....do.....	5.28
14	....do.....	....do.....	4.62
Nov. 19	Schwartz Spring Branch (south prong), Oreg.	SW¼SE¼ sec. 23, T. 6 N., R. 34 E., at weirs.....	4.39
Feb. 26	....do.....	....do.....	5.14
June 13	....do.....	....do.....	8.65
Aug. 8	....do.....	....do.....	3.06
Nov. 19	Schwartz Spring Branch (north prong), Oreg.	NE¼SW¼ sec. 23, T. 6 N., R. 34 E., in ditch diverting from spring.	3.20
Feb. 26	....do.....	....do.....	4.27
June 13	....do.....	....do.....	3.13
Aug. 8	....do.....	....do.....	2.48
Feb. 27	South Mud Creek, Oreg...	SW¼SE¼ sec. 13, T. 6 N., R. 34 E., at Krumbaugh farm.	4.79
Aug. 8	....do.....	....do.....	3.24

† Measurements by Umatilla County deputy watermaster.

Measurements of streamflow in the Pacific slope basins in Oregon and lower Columbia River basin made at points other than gaging stations are given in the following table. Determinations of peak flow at points other than gaging stations are given in a separate table on pages 294-295.

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1952 to September 1953

Walla Walla River basin, Wash.

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
Oct. 16	Yellowhawk Creek..	Mill Creek.....	NW¼SW¼ sec. 23, T. 7 N., R. 36 E., at site of former gaging station at Walla Walla.	26.6
16	Garrison Creek....	....do.....	NE¼ sec. 22, T. 7 N., R. 36 E., at site of former gaging station at Walla Walla.	8.8
Nov. 21	....do.....	....do.....	....do.....	10.9

Umatilla River basin, Oreg.

July 13	Meacham Creek.....	Umatilla River...	Mouth, 1 mile east of Gibbon.....	24.0

John Day River basin, Oreg.

July 30	Slide Creek.....	Strawberry Creek.	Mouth, sec. 20, T. 14 S., R. 34 E., 9 miles south of Prairie City.	5.05
Apr. 28	Dixie Creek.....	John Day River...	Mouth, at Prairie City.....	57.0
July 29	Canyon Creek.....	....do.....	NW¼ sec. 25, T. 14 S., R. 31 E., 4 miles south of Canyon City.	21.6
29	Beech Creek.....	....do.....	NE¼ sec. 21, T. 13 S., R. 30 E., 1 mile northeast of Mt. Vernon.	5.86
28	Big Meadow Creek*.	North Fork John Day River.	Mouth, in sec. 13, T. 7 S., R. 33 E., 13 miles east of Dale.	9.40
9	Cable Creek.....	Camas Creek.....	Mouth, 5 miles northeast of Ukiah.....	10.7
Aug. 19	Wiley Creek.....	Fox Creek.....	NW¼ sec. 20, T. 11 S., R. 30 E., 1.2 miles south of Beech Creek.	.03
July 15	Rock Creek.....	John Day River...	Mouth, 6½ miles northwest of Dayville...	20.4

* Previous measurements on this stream published as "Big Creek."

Deschutes River basin, Oreg.

Oct. 17	Deschutes River...	Columbia River...	NW¼ sec. 28, T. 21 S., R. 8 E., at former gaging station below Sheep Springs near Lapine.	571
Sept.23	Davis Creek.....	Deschutes River..	SW¼ sec. 7, T. 22 S., R. 8 E., below springs at north head of creek.	84.9
Oct. 17	....do.....	....do.....	SE¼ sec. 5, T. 22 S., R. 8 E., downstream from unnamed left-bank tributary.	262
Nov. 4	....do.....	....do.....	....do.....	242
Oct. 16	Unnamed stream....	....do.....	Near center of sec. 4, T. 22 S., R. 9 E., at road crossing about 2 miles northeast of Wickiup Dam.	11.7
Nov. 18	....do.....	....do.....	....do.....	13.9
Apr. 23	....do.....	....do.....	....do.....	10.5
June 9	....do.....	....do.....	....do.....	26.8
12	....do.....	....do.....	....do.....	17.0
Mar. 26	Little Deschutes River.	....do.....	SE¼ sec. 30, T. 20 S., R. 11 E., at former gaging station at Johnson Ranch.	†349
May 5	....do.....	....do.....	....do.....	629
28	....do.....	....do.....	....do.....	709
June 10	....do.....	....do.....	....do.....	554
10	....do.....	....do.....	....do.....	587
July 1	....do.....	....do.....	....do.....	470
27	....do.....	....do.....	....do.....	335
Aug. 7	....do.....	....do.....	....do.....	321
Sept. 4	....do.....	....do.....	....do.....	284
24	....do.....	....do.....	....do.....	245
Jan. 12	Clear Creek.....	White River.....	At former gaging station near Government Camp.	14.6

† Two measurements made this day giving same discharge.

Klickitat River basin, Wash.

June 17	Unnamed springs...	Klickitat River..	NE¼ sec. 4, T. 6 N., R. 13 E., at mouth, across river from fish hatchery, 5¼ miles northeast of Glenwood.	13.9
July 13	....do.....	....do.....	....do.....	13.8
27	....do.....	....do.....	....do.....	14.2
Aug. 19	....do.....	....do.....	....do.....	16.2
June 17	Wonder Springs....	....do.....	E½ sec. 4, T. 6 N., R. 13 E., 3/8 mile above mouth, 5½ miles northeast of Glenwood.	15.7
July 13	....do.....	....do.....	....do.....	18.2
27	....do.....	....do.....	....do.....	18.9
Aug. 19	....do.....	....do.....	....do.....	18.2
Dec. 3	Klickitat River...	Columbia River...	SW¼NE¼ sec. 17, T. 4 N., R. 14 E., at road crossing, 1½ miles northeast of Wahkiacus.	814
30	....do.....	....do.....	....do.....	866
Jan. 15	....do.....	....do.....	....do.....	3,060

Tributaries to Columbia River between Deschutes River and Sandy River, Oreg.

Jan. 13	Unnamed stream....	Columbia River...	NW¼ sec. 7, T. 2 N., R. 8 E., at highway bridge 1 mile east of Cascade locks.	34.6

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1952 to September 1953--Continued

Tributaries to Columbia River between Deschutes River and Sandy River, Oreg.--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
Jan. 18	Unnamed stream....	Columbia River...	NW¼ sec. 7, T. 2 N., R. 8 E., at highway bridge 1 mile east of Cascade locks.	103
		Hamilton Creek basin, Wash.		
June 18	Greenleaf Creek...	Hamilton Creek...	SW¼ sec. 16, T. 2 N., R. 7 E., at road crossing, ¼ mile northwest of Bonneville.	14.9
July 16	....do.....	....do.....	....do.....	6.09
28	....do.....	....do.....	....do.....	4.63
Sept. 9	....do.....	....do.....	....do.....	2.67
		Woodward Creek basin, Wash.		
June 18	Woodward Creek....	Columbia River...	NE¼ sec. 35, T. 2 N., R. 6 E., just above railroad bridge near mouth, 3¾ miles southwest of North Bonneville.	23.8
July 16	....do.....	....do.....	....do.....	9.32
28	....do.....	....do.....	....do.....	7.35
Sept. 8	....do.....	....do.....	....do.....	3.95
		Lawton Creek basin, Wash.		
June 16	Lawton Creek.....	Columbia River...	NW¼ sec. 24, T. 1 N., R. 4 E., just below railroad crossing near mouth, 4 miles southeast of Washougal.	6.02
July 14	....do.....	....do.....	....do.....	2.90
28	....do.....	....do.....	....do.....	2.21
Aug. 20	....do.....	....do.....	....do.....	1.66
		Sandy River basin, Oreg.		
June 9	Lady Creek.....	Zigzag River.....	Mouth, 4 miles east of Rhododendron.....	27.8
Oct. 21	Salmon River.....	Sandy River.....	At former gaging station near Brightwood.	78.6
		Washougal River basin, Wash.		
July 3	Dougan Creek.....	Washougal River..	E½ sec. 11, T. 2 N., R. 5 E., 1,300 ft above mouth and 6 miles north of Prindle.	7.65
3	....do.....	....do.....	E½ sec. 11, T. 2 N., R. 5 E., 10 ft above mouth and 6 miles north of Prindle.	9.04
20	....do.....	....do.....	....do.....	4.16
Aug. 3	....do.....	....do.....	....do.....	3.13
Sept. 9	....do.....	....do.....	....do.....	4.48
June 2	Bobs Creek.....	....do.....	NW¼ sec. 23, T. 2 N., R. 5 E., 50 ft above mouth, 4½ miles north of Prindle.	3.33
9	....do.....	....do.....	....do.....	3.32
18	....do.....	....do.....	....do.....	2.88
July 17	....do.....	....do.....	....do.....	2.99
29	....do.....	....do.....	....do.....	2.91
Sept.10	....do.....	....do.....	....do.....	2.92
June 18	Boyles Lake Outlet	....do.....	W½ sec. 23, T. 2 N., R. 5 E., at mouth, 4½ miles north of Prindle.	5.74
July 17	....do.....	....do.....	....do.....	3.00
29	....do.....	....do.....	....do.....	2.78
Sept.10	....do.....	....do.....	....do.....	1.42
June 18	Unnamed creek.....	....do.....	W½ sec. 23, T. 2 N., R. 5 E., at mouth, 4½ miles north of Prindle.	1.96
July 17	....do.....	....do.....	....do.....	1.10
29	....do.....	....do.....	....do.....	.62
Sept.10	....do.....	....do.....	....do.....	.34
July 17	Washougal River...	Columbia River...	SW¼ sec. 23, T. 2 N., R. 5 E., 3½ miles north of Prindle.	60.7
29	....do.....	....do.....	....do.....	51.3
6	Texas Creek.....	West Fork Washougal River.	NE¼ sec. 20, T. 2 N., R. 5 E., 200 ft above mouth and 4½ miles northwest of Prindle.	11.7
20	....do.....	....do.....	....do.....	8.76
Sept.10	....do.....	....do.....	....do.....	4.43
June 2	Vogel Creek.....	....do.....	SE¼ sec. 29, T. 2 N., R. 5 E., just above weir, 3½ miles northwest of Prindle.	5.58
9	....do.....	....do.....	....do.....	4.45
July 17	....do.....	....do.....	....do.....	1.47
20	West Fork Washougal River.....	Washougal River..	Center sec. 32, T. 2 N., R. 5 E., 1,000 ft above mouth and 7 miles northeast of Washougal.	43.3
Aug. 3	....do.....	....do.....	....do.....	37.1
June 2	Unnamed creek.....	....do.....	SW¼ sec. 25, T. 2 N., R. 4 E., at road crossing, 5 miles northeast of Washougal.	6.12
9	....do.....	....do.....	....do.....	5.53
		Willamette River basin, Oreg.		
Jan. 21	Prather Creek.....	Layng Creek.....	NW¼SW¼ sec. 30, T. 21 S., R. 1 E., at diversion dam.	57.1
19	Unnamed stream....	Willamette River.	W½SW¼ sec. 11, T. 18 S., R. 3 W., at highway crossing, 2 miles south of Springfield.	23.3

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1952 to September 1953--Continued

Willamette River basin, Oreg.--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
May 22	Hackleman Creek...	Fish Lake.....	Near center of sec. 32, T. 13 S., R. 6 E., at highway crossing, 4½ miles west of Fish Lake.	3.20
Jan. 14	Echo Creek.....	Hackleman Creek...	SE¼ sec. 27, T. 13 S., R. 6 E., at highway crossing, 2½ miles west of Fish Lake.	16.9
May 22	....do.....	....do.....	....do.....	9.55
Oct. 16	Hackleman Creek...	Fish Lake.....	NE¼SE¼ sec. 25, T. 13 S., R. 6 E., half a mile northwest of Fish Lake.	a2.34
Nov. 9	....do.....	....do.....	....do.....	a2.18
Apr. 21	Fish Lake Creek...	Clear Lake.....	SW¼NW¼ sec. 32, T. 13 S., R. 7 E., below outlet of Fish Lake.	0
June 24	....do.....	....do.....	....do.....	177
July 16	....do.....	....do.....	....do.....	47.1
Oct. 16	McKenzie River....	Willamette River..	NE¼ sec. 17, T. 14 S., R. 7 E., half a mile downstream from outlet of Clear Lake.	a243
Nov. 20	....do.....	....do.....	....do.....	a201
Dec. 2	....do.....	....do.....	....do.....	177
May 28	....do.....	....do.....	NW¼ sec. 20, T. 14 S., R. 7 E., a third of a mile below Middle Falls.	1,090
Aug. 27	....do.....	....do.....	....do.....	501
Oct. 16	Ice Cap Creek.....	McKenzie River....	Sec. 20, T. 14 S., R. 7 E., half a mile southwest of Middle Falls.	a12.9
Nov. 9	....do.....	....do.....	....do.....	a12.6
Oct. 2	McKenzie River....	Willamette River..	NW¼ sec. 31, T. 14 S., R. 7 E., 20 ft above Lower Falls (most of flow underground at this point).	a18.0
15	....do.....	....do.....	....do.....	a4.28
Aug. 15	....do.....	....do.....	NE¼ sec. 1, T. 15 S., R. 6 E., 1 mile below Lower Falls.	722
Oct. 15	Kink Creek.....	McKenzie River....	SW¼NW¼ sec. 6, T. 15 S., R. 7 E., at highway bridge, 7 miles north of Belknap Springs.	4.04
2	Carmen Creek.....	....do.....	Road crossing, 6½ miles north of Belknap Springs.	a46.4
15	....do.....	....do.....	....do.....	a45.8
Oct. 2	Smith River.....	....do.....	Mouth, SE¼SE¼ sec. 11, T. 15 S., R. 6 E..	a14.1
15	....do.....	....do.....	....do.....	a12.1
May 28	McKenzie River....	Willamette River..	Below Frissell Creek, 3 miles northwest of Belknap Springs.	1,900
July 16	....do.....	....do.....	....do.....	1,400
Aug. 27	....do.....	....do.....	....do.....	1,170
Sept.29	Wolf Creek.....	Blue River.....	Former gaging station near McKenzie Bridge.	b1.16
29	Mann Creek.....	....do.....	....do.....	b2.34
Oct. 3	Unnamed stream....	Lookout Creek.....	NE¼ sec. 31, T. 15 S., R. 5 E., 6.8 miles northeast of Blue River.	.08
21	....do.....	....do.....	....do.....	.08
23	....do.....	....do.....	....do.....	.06
Dec. 4	....do.....	....do.....	....do.....	1.46
Jan. 9	....do.....	....do.....	....do.....	6.72
14	....do.....	....do.....	....do.....	5.37
20	....do.....	....do.....	....do.....	15.2
Feb. 26	....do.....	....do.....	....do.....	1.51
Apr. 1	....do.....	....do.....	....do.....	1.67
May 27	....do.....	....do.....	....do.....	2.55
July 17	....do.....	....do.....	....do.....	.25
Aug. 21	....do.....	....do.....	....do.....	.13
Oct. 3	....do.....	....do.....	SE¼ sec. 31, T. 15 S., R. 5 E., 6.5 miles northeast of Blue River.	.04
21	....do.....	....do.....	....do.....	.03
23	....do.....	....do.....	....do.....	.04
24	....do.....	....do.....	....do.....	.03
Dec. 4	....do.....	....do.....	....do.....	1.19
Jan. 9	....do.....	....do.....	....do.....	4.89
14	....do.....	....do.....	....do.....	5.08
20	....do.....	....do.....	....do.....	10.3
Feb. 26	....do.....	....do.....	....do.....	1.13
Apr. 1	....do.....	....do.....	....do.....	1.34
May 27	....do.....	....do.....	....do.....	1.60
July 17	....do.....	....do.....	....do.....	.17
Aug. 21	....do.....	....do.....	....do.....	.09
Oct. 3	....do.....	....do.....	NW¼ sec. 6, T. 16 S., R. 5 E., 6 miles northeast of Blue River.	.04
21	....do.....	....do.....	....do.....	.03
23	....do.....	....do.....	....do.....	.03
24	....do.....	....do.....	....do.....	.03
Dec. 4	....do.....	....do.....	....do.....	1.13
Jan. 9	....do.....	....do.....	....do.....	9.01
14	....do.....	....do.....	....do.....	7.06
20	....do.....	....do.....	....do.....	14.8
Feb. 26	....do.....	....do.....	....do.....	1.30
Apr. 1	....do.....	....do.....	....do.....	1.36
May 27	....do.....	....do.....	....do.....	3.76
July 17	....do.....	....do.....	....do.....	.13
Aug. 21	....do.....	....do.....	....do.....	.06
Oct. 16	Mohawk River.....	McKenzie River....	Former gaging station near Springfield..	20.3
28	Rock Creek.....	Greasey Creek.....	Former gaging station near Philomath....	.65
Dec. 9	Bowers Slough.....	Willamette River..	NE¼ sec. 33, T. 10 S., R. 4 W., at road crossing, 4 miles northwest of Albany.	5.70
May 27	....do.....	....do.....	....do.....	9.74
Aug. 21	....do.....	....do.....	....do.....	0
Sept.24	....do.....	....do.....	....do.....	0

a Furnished by Eugene Water and Electric Board.
b Furnished by Corps of Engineers.

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1952 to September 1953--Continued

Willamette River basin, Oreg.--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
Oct. 22	North Santiam River	Santiam River.....	Former gaging station at Detroit.....	428
21	Breitenbush River..	North Santiam River	Former gaging station near Detroit....	131
Jan. 19	....do.....	....do.....	....do.....	4,040
Feb. 24	Sardine Creek.....	....do.....	Mouth, in W½ sec. 36, T. 9 S., R. 4 E.	21.3
25	Cold Creek.....	....do.....	Mouth, 0.8 mile east of Niagara.....	8.10
Jan. 22	Unnamed stream.....	....do.....	Mouth, at highway crossing 1½ miles east of Gates.	27.1
Feb. 25	....do.....	....do.....	....do.....	5.41
Jan. 15	Rocky Creek.....	....do.....	Mouth, 2 miles west of Mill City.....	31.0
Feb. 25	....do.....	....do.....	....do.....	11.0
27	Unnamed stream.....	South Santiam River	Mouth, in SW¼SE¼ sec. 36, T. 13 S., R. 2 E.	2.05
May 22	....do.....	....do.....	....do.....	5.20
Oct. 27	Little Luckiamute River.	Luckiamute River...	Half a mile above mouth, near Suver...	11.5
Mar. 3	....do.....	....do.....	....do.....	257
Apr. 13	....do.....	....do.....	....do.....	220
July 13	....do.....	....do.....	....do.....	41.3
Sept.16	....do.....	....do.....	....do.....	17.7
Dec. 9	Unnamed stream.....	Soap Creek.....	SW¼NE¼ sec. 18, T. 10 S., R. 4 W., at highway crossing 3 miles south of Suver.	1.5
Sept.25	....do.....	Willamette River...	NW¼NE¼ sec. 13, T. 8 S., R. 4 W., at entrance of spillway to Barker Reservoir, 4½ miles southwest of Salem.	.11
Jan. 15	....do.....	Glenn Creek.....	SE¼SE¼ sec. 8, T. 7 S., R. 3 W., at road crossing, 4 miles northwest of Salem.	33.3
15	Glenn Creek.....	Willamette River...	SE¼NW¼ sec. 20, T. 7 S., R. 3 W., at road crossing, 3 miles northwest of Salem.	14.6
Oct. 7	Butte Creek.....	Pudding River.....	Former gaging station at Monitor.....	6.17
14	Mill Creek.....	....do.....	Half a mile above mouth, at Aurora....	7.66
Nov. 24	....do.....	....do.....	....do.....	8.84
July 29	....do.....	....do.....	....do.....	4.77
Sept.15	....do.....	....do.....	....do.....	7.09
Jan. 23	Beaver Creek.....	Gales Creek.....	Sec. 10, T. 2 N., R. 5 W., at road crossing, 7 miles northwest of Gales Creek.	90.1
July 8	West Fork Dairy Creek.	Dairy Creek.....	NE¼ sec. 18, T. 1 N., R. 3 W., at bridge, 4 miles north of Forest Grove.	15.3
11	....do.....	....do.....	NW¼NW¼ sec. 24, T. 2 N., R. 4 W., at bridge, 2 miles northwest of Banks.	14.2
Apr. 25	Goose Creek.....	Clackamas River....	NE¼NW¼ sec. 32, T. 2 S., R. 4 E., ½ mile east of Eagle Creek.	1.02
Jan. 13	Unnamed stream.....	Willamette River...	SE¼ sec. 13, T. 1 N., R. 1 W., at road crossing.	7.30
16	....do.....	....do.....	....do.....	35.7
18	....do.....	....do.....	....do.....	64.5

Lewis River basin, Wash.

May 7	Lewis River.....	Columbia River.....	NW¼ sec. 32, T. 6 N., R. 4 E., ¼ mile below Yale dam, 3 miles southeast of Yale.	7,450
June 6	....do.....	....do.....	....do.....	4,100
July 7	....do.....	....do.....	....do.....	3,560
Aug. 11	....do.....	....do.....	....do.....	1,300
Sept.17	....do.....	....do.....	....do.....	3,060
July 7	Speelyai Creek.....	Lake Merwin.....	W½ sec. 23, T. 6 N., R. 3 E., at mouth, 1 mile southwest of Yale.	46.6
21	....do.....	....do.....	....do.....	30.9
Aug. 11	....do.....	....do.....	....do.....	22.6
Sept.22	....do.....	....do.....	....do.....	23.7
July 6	Copper Creek.....	East Fork Lewis River.	SE¼ sec. 30, T. 4 N., R. 5 E., just below Forest Service road bridge, 1.8 miles south of Sunset guard station.	20.6
21	....do.....	....do.....	....do.....	15.6
Aug. 11	....do.....	....do.....	....do.....	9.62
July 6	Rock Creek.....	....do.....	NE¼ sec. 31, T. 4 N., R. 4 E., just above swinging bridge, 1½ miles northwest of Dole.	33.7
21	....do.....	....do.....	....do.....	27.7
Aug. 11	....do.....	....do.....	....do.....	19.5
17	East Fork Lewis River.	Lewis River.....	SE¼ sec. 20, T. 4 N., R. 2 E., 200 ft above bridge and 5 miles southeast of La Center.	68.9

Kalama River basin, Wash.

July 7	Little Kalama River	Kalama River.....	NE¼ sec. 22, T. 6 N., R. 1 E., at road crossing, 7 miles northeast of Woodland.	2.88
21	....do.....	....do.....	....do.....	1.97
Aug. 11	....do.....	....do.....	....do.....	1.88
Sept.23	....do.....	....do.....	....do.....	1.65

Cowlitz River basin, Wash.

Oct. 3	Snyder Creek.....	Hall Creek.....	NW¼ sec. 26, T. 13 N., R. 9 E., at trail crossing below Snyder Lake, 1½ miles southeast of Packwood.	0.45

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1952 to September 1953--Continued

Cowlitz River basin, Wash.--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
Oct. 3	Hager Creek.....	Hall Creek.....	NE¼ sec. 35, T. 13 N., R. 9 E., 500 ft below Hager Lake, 2½ miles southeast of Packwood.	5.04
3	....do.....	....do.....	SW¼ sec. 26, T. 13 N., R. 9 E., ¾ mile below Hager Lake, 2 miles southeast of Packwood.	5.90
3	North Fork Hager Creek.	Hager Creek.....	NW¼ sec. 26, T. 13 N., R. 9 E., at Lily Basin trail crossing, 1½ miles southeast of Packwood.	2.91
4	Glacier Creek.....	Johnson Creek.....	SE¼ sec. 12, T. 12 N., R. 9 E. (unsurveyed), at road crossing near mouth, 5 miles southeast of Packwood.	8.00
Jan. 21	....do.....	....do.....	....do.....	74.7
May 12	....do.....	....do.....	....do.....	60.2
June 16	....do.....	....do.....	....do.....	67.2
Oct. 4	Johnson Creek.....	Cowlitz River.....	SW¼ sec. 33, T. 13 N., R. 9 E., at site of former gaging station, 1 mile above mouth and 2½ miles southwest of Packwood.	26.6
Aug. 18	East Fork Tilton River.	Tilton River.....	NE¼ sec. 25, T. 13 N., R. 4 E., 100 ft below highway crossing and 2½ miles northeast of Morton.	16.6
18	Salmon Creek.....	Cowlitz River.....	N½ sec. 33, T. 11 N., R. 1 E., 150 ft below road crossing and 8½ miles southeast of Toledo.	.97
18	Cedar Creek.....	Salmon Creek.....	NE¼ sec. 20, T. 11 N., R. 1 E., 150 ft above road crossing and 6½ miles east of Toledo.	.44
July 10	Salmon Creek.....	Cowlitz River.....	NW¼ sec. 28, T. 11 N., R. 1 W., 1,000 ft below mouth of Little Salmon Creek and 2¼ miles southeast of Toledo.	8.03
23	....do.....	....do.....	....do.....	3.81
Aug. 10	....do.....	....do.....	....do.....	2.53
Sept.25	....do.....	....do.....	....do.....	2.20
July 10	Lacamas Creek.....	....do.....	NW¼ sec. 27, T. 11 N., R. 2 W., above road bridge, 1½ miles east of Vader.	3.83
23	....do.....	....do.....	....do.....	2.67
Aug. 12	....do.....	....do.....	....do.....	2.51
Sept.21	....do.....	....do.....	....do.....	3.44
July 10	Olequa Creek.....	....do.....	SE¼ sec. 21, T. 12 N., R. 2 W., just above North Fork, 1½ miles north of Winlock.	3.81
23	....do.....	....do.....	....do.....	3.48
Aug. 12	....do.....	....do.....	....do.....	3.88
Sept.21	....do.....	....do.....	....do.....	3.89
July 10	North Fork Olequa Creek.	Olequa Creek.....	SE¼ sec. 21, T. 12 N., R. 2 W., 50 ft above mouth and 1½ miles north of Winlock.	.46
23	....do.....	....do.....	....do.....	.29
Aug. 12	....do.....	....do.....	....do.....	.24
Sept.21	....do.....	....do.....	....do.....	.28
Aug. 18	North Fork Toutle River.	Toutle River.....	NE¼ sec. 15, T. 9 N., R. 5 E., at road crossing at outlet of Spirit Lake.	44.7
July 10	Scantigrease Creek	Arkansas Creek....	SE¼ sec. 18, T. 9 N., R. 2 W., at road crossing, 3½ miles west of Castle Rock.	3.52
23	....do.....	....do.....	....do.....	2.40
Aug. 12	....do.....	....do.....	....do.....	.91
Sept.22	....do.....	....do.....	....do.....	1.34
July 10	North Fork Arkansas Creek.	....do.....	SE¼ sec. 9, T. 9 N., R. 2 W., at road crossing, 1 mile west of Castle Rock.	8.72
23	....do.....	....do.....	....do.....	5.82
Aug. 12	....do.....	....do.....	....do.....	3.40
Sept.22	....do.....	....do.....	....do.....	3.30
July 8	Ostrander Creek...	Cowlitz River.....	NW¼ sec. 12, T. 8 N., R. 2 W., just above South Fork, 3½ miles north of Kelso.	5.14
23	....do.....	....do.....	....do.....	2.85
Aug. 10	....do.....	....do.....	....do.....	2.01
Sept. 7	....do.....	....do.....	....do.....	1.71
24	....do.....	....do.....	....do.....	2.09
July 8	South Fork Ostrander Creek.	Ostrander Creek...	NW¼ sec. 12, T. 8 N., R. 2 W., at mouth, 3½ miles north of Kelso.	2.60
23	....do.....	....do.....	....do.....	2.02
Aug. 10	....do.....	....do.....	....do.....	1.49
Sept.11	....do.....	....do.....	....do.....	.85
24	....do.....	....do.....	....do.....	1.54
July 8	Coweman River.....	Cowlitz River.....	SW¼ sec. 17, T. 8 N., R. 1 E., at site of former gaging station above Mulholland Creek, 9½ miles east of Kelso.	77.5
22	....do.....	....do.....	....do.....	51.2
Aug. 13	....do.....	....do.....	....do.....	35.6
Sept.22	....do.....	....do.....	....do.....	27.7
July 8	Mulholland Creek..	Coweman River.....	SW¼ sec. 17, T. 8 N., R. 1 E., at road crossing at mouth, 9½ miles east of Kelso.	15.0
22	....do.....	....do.....	....do.....	9.11
Aug. 13	....do.....	....do.....	....do.....	4.82
Sept.22	....do.....	....do.....	....do.....	4.25
July 8	Goble Creek.....	....do.....	SE¼ sec. 34, T. 8 N., R. 1 W., at road crossing, 5½ miles east of Kelso.	15.7
22	....do.....	....do.....	....do.....	13.2
Aug. 13	....do.....	....do.....	....do.....	8.10
Sept.22	....do.....	....do.....	....do.....	7.06

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1952 to September 1953--Continued

Germany Creek basin, Wash.

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
July 9	Germany Creek.....	Columbia River....	NW¼ sec. 12, T. 8 N., R. 4 W., ½ mile above mouth and 10 miles northwest of Longview.	14.7
22	....do.....	....do.....	....do.....	11.2
Aug. 13	....do.....	....do.....	....do.....	6.43
Sept.23	....do.....	....do.....	....do.....	6.71

Abernathy Creek basin, Wash.

July 9	Cameron Creek.....	Abernathy Creek...	NW¼ sec. 10, T. 8 N., R. 4 W., at mouth, 11 miles east of Cathlamet.	3.11
22	....do.....	....do.....	....do.....	2.30
Aug. 13	....do.....	....do.....	....do.....	1.19
Sept.23	....do.....	....do.....	....do.....	1.70

Mill Creek basin, Wash.

July 9	Little Mill Creek	Mill Creek.....	NW¼ sec. 9, T. 8 N., R. 4 W., at mouth, 9½ miles east of Cathlamet.	8.60
22	....do.....	....do.....	....do.....	6.09
Aug. 13	....do.....	....do.....	....do.....	3.81
Sept.23	....do.....	....do.....	....do.....	4.44

Columbia River basin, below Willamette River, Oreg.

Mar. 2	Gnat Creek.....	Blind Slough.....	W½ sec. 14, T. 8 N., R. 7 W., 3 miles east of Knappa junction.	58.0

Grays River basin, Wash.

July 2	Grays River.....	Columbia River....	W½ sec. 17, T. 11 N., R. 6 W., just above East Fork, 11½ miles north of Skamokawa.	34.5
24	....do.....	....do.....	....do.....	17.1
Aug. 14	....do.....	....do.....	....do.....	12.6
Sept.24	....do.....	....do.....	....do.....	13.3
July 2	East Fork Grays River.	Grays River.....	W½ sec. 17, T. 11 N., R. 6 W., at mouth, 11½ miles north of Skamokawa.	29.2
24	....do.....	....do.....	....do.....	18.1
Aug. 14	....do.....	....do.....	....do.....	14.9
Sept.24	....do.....	....do.....	....do.....	9.75
July 2	South Fork Grays River.	....do.....	NW¼ sec. 31, T. 11 N., R. 6 W., 500 ft above mouth and 6½ miles north of Skamokawa.	37.2
24	....do.....	....do.....	....do.....	17.5
Aug. 14	....do.....	....do.....	....do.....	9.97
Sept.24	....do.....	....do.....	....do.....	10.8
Oct. 8	Grays River.....	Columbia River....	Center sec. 3, T. 10 N., R. 7 W., 1½ miles above West Branch and 4½ miles northeast of Grays River.	18.4
July 9	Falls Creek.....	Hull Creek.....	SE¼ sec. 6, T. 10 N., R. 7 W., 100 ft above falls and 1½ miles northeast of Grays River.	1.92
24	....do.....	....do.....	....do.....	1.00
Aug. 14	....do.....	....do.....	....do.....	.62
Sept.23	....do.....	....do.....	....do.....	.85
July 9	Hull Creek.....	Grays River.....	NE¼ sec. 13, T. 10 N., R. 8 W., at crossing of U. S. Highway 830, ¼ mile east of Grays River.	10.1
24	....do.....	....do.....	....do.....	5.97
Aug. 14	....do.....	....do.....	....do.....	3.01
Sept.23	....do.....	....do.....	....do.....	3.33

Coastal streams between Columbia River and Umpqua River, Oreg.

Dec. 8	North Fork Necanicum River.	Necanicum River...	Above fish hatchery, 2 miles west of Necanicum.	85.9
9	South Fork Necanicum River.	....do.....	Above Seaside diversion dam, 6 miles east of Cannon Beach.	195
May 1	....do.....	....do.....	....do.....	69.6
Jan. 9	Asbury Creek.....	Pacific Ocean.....	Mouth, 5½ miles south of Cannon Beach.	66.6
Apr. 30	Nehalem River.....	Nehalem Bay.....	Sec. 25, T. 4 N., R. 8 W., 4½ miles south of Elsie.	2,140
Mar. 12	South Fork Weiss Creek.	Eckman Creek.....	Waldport diversion, 3 miles southeast of Waldport.	.8

Umpqua River basin, Oreg.

Jan. 16	Canyon Creek.....	South Umpqua River	SE¼ sec. 23, T. 31 S., R. 5 W., at highway crossing, 5 miles south of Canyonville.	52.6
16	Unnamed stream....	....do.....	Road crossing, South Stramer St., at Marsters St., in Roseburg.	74.1
20	....do.....	....do.....	....do.....	24.4
20	....do.....	....do.....	NE¼SW¼ sec. 3, T. 27 S., R. 6 W., at road crossing, 4 miles northwest of Roseburg.	17.5
Nov. 25	Trap Creek.....	Clearwater River..	Mouth, 8 miles northwest of Diamond Lake.	1.30
Feb. 14	....do.....	....do.....	....do.....	8.98
July 20	....do.....	....do.....	....do.....	3.34

Miscellaneous discharge measurements in Pacific slope basins in Oregon and lower Columbia River basin during water year October 1952 to September 1953--Continued

Umpqua River basin, Oreg.--Continued

Date	Stream	Tributary to or diverting from--	Locality	Discharge (cfs)
Nov. 24	Camas Creek.....	Fish Creek.....	Mouth, SW¼ sec. 10, T. 27 S., R. 3 E...	0.90
Feb. 14	....do.....	....do.....	....do.....	18.7
July 21	....do.....	....do.....	....do.....	2.29
Jan. 13	Buckhorn Creek....	Little River.....	NE¼ sec. 30, T. 26 S., R. 3 W., at road crossing 1 mile south of Glide.	103
20	....do.....	....do.....	....do.....	63.2
20	Bear Creek.....	Billy Creek.....	Above Drain diversion, 4 miles southwest of Drain.	178

Rogue River basin, Oreg.

Sept. 1	Bybee Creek.....	Rogue River.....	Mouth, 13 miles northeast of Prospect..	39.5
1	Castle Creek.....	....do.....	....do.....	26.3
May 20	Cool Creek**.....	Mill Creek.....	Below county road at Prospect.....	13.2
20	Sheep Creek**.....	....do.....	250 ft above power canal crossing, half a mile north of Prospect.	3.48
20	....do.....	....do.....	Above Crater Lake highway crossing at Prospect.	.95
20	....do.....	....do.....	250 ft below Crater Lake highway crossing at Prospect.	.15
Nov. 14	Dead Indian Creek.	South Fork Little Butte Creek.	Sec. 15, T. 38 S., R. 3 E., 14 miles northeast of Ashland.	1.22
Apr. 12	....do.....	....do.....	....do.....	12.8
May 27	....do.....	....do.....	....do.....	30.1
Jan. 18	Murderer Creek....	Reese Creek.....	Mouth, in SW¼ sec. 10, T. 35 S., R. 1 W.	90.8
13	Jackson Creek.....	Bear Creek.....	NW¼ sec. 25, T. 37 S., R. 3 W., at road crossing, 2½ miles northwest of Jacksonville.	6.31
19	Right Fork Sardine Creek.	Sardine Creek.....	Sec. 28, T. 35 S., R. 3 W., 5 miles north of Gold Hill.	56.9
23	Slate Creek.....	Applegate River...	NE¼ sec. 12, T. 37 S., R. 8 W., 6 miles west of Wilderville.	68.8
14	Shanks Creek.....	Grave Creek.....	SW¼ sec. 7, T. 34 S., R. 5 W., above Burgess Gulch, 1½ miles west of Placer.	14
14	Burgess Gulch.....	Shanks Creek.....	SW¼ sec. 7, T. 34 S., R. 5 W., near mouth, 1½ miles west of Placer.	19

** Intermittent stream; short periods of flow in 1917, 1938, 1943, 1949-53. Flow sinks into ground just below measuring sections.

The following table contains determinations of peak discharge made at crest stage by indirect methods at points other than regular gaging stations in the area covered by this report.

Miscellaneous determinations of peak discharge during water year October 1952 to September 1953

Date	Stream	Tributary to--	Locality	Discharge (cfs)
Aug. 28	Blackhorse Creek..	Willow Creek.....	At highway bridge ½ mile upstream from Lexington, Oreg.	1,740
28	Clark Canyon.....	....do.....	At reach alongside road, 0.7 mile downstream from Fuller Canyon, and 5.75 miles southwest of Lexington, Oreg.	3,240
28	Unnamed stream....	Eightmile Canyon..	At concrete bridge on Condon-Ione road, 10 miles south of Ione, and 17 miles northeast of Condon, Oreg.	427
28	Eightmile Canyon..	Willow Creek.....	At reach about 10 miles south of Ione and 18 miles northeast of Condon, Oreg.	2,110
Jan. 9	Rock Creek.....	Columbia River....	W½ sec. 11, T. 4 N., R. 18 E., county road crossing, 14 miles east of Goldendale, Wash.	2,580
Aug. 26	Bull Run Canyon...	Grass Valley Canyon.	W½ sec. 32, T. 1 N., R. 18 E., at State Highway 206 about 4 miles south of Klondike, Oreg.	1,030
Jan. 9	Rock Creek.....	Little White Salmon River.	NW¼ sec. 14, T. 3 N., R. 9 E., at crossing of county road, 2 miles south of Willard, Wash.	256
9	Unnamed creek.....	Columbia River....	SE¼ sec. 27, T. 3 N., R. 8 E., at crossing of U. S. Highway 830, ½ mile east of Home Valley, Wash.	58.2
18	....do.....	....do.....	NW¼ sec. 7, T. 2 N., R. 8 E., at highway bridge, 1 mile east of Cascade Locks, Oreg.	119
18	Lady Creek.....	Zigzag River.....	Mouth, 4 miles east of Rhododendron, Oreg.	339
18	Canyon Creek.....	Washougal River...	SE¼ sec. 4, T. 1 N., R. 5 E., at crossing of State Highway 8B, 8 miles east of Washougal, Wash.	188
18	Shanghai Creek....	Fifth Plain Creek.	SW¼ sec. 33, T. 3 N., R. 3 E., at crossing of county road, 3½ miles southeast of Hockinson, Wash.	116
18	North and South Creeks.	Middle Fork Willamette River	Road crossing at mouth, 9 miles northwest of Oakridge, Oreg.	272
18	Prather Creek.....	Layng Creek.....	NW¼SW¼ sec. 30, T. 21 S., R. 1 E., at diversion dam, Oreg.	232
Dec. 7	Hackleman Creek...	Fish Lake.....	Near center of sec. 32, T. 13 S., R. 6 E., at highway crossing, 4½ miles west of Fish Lake, Oreg.	46.8

Miscellaneous determinations of peak discharge during water year October 1952 to September 1953--Continued

Date	Stream	Tributary to--	Locality	Discharge (cfs)
Dec. 7	Echo Creek.....	Hackleman Creek...	SE¼ sec. 27, T. 13 S., R. 6 E., at highway crossing, 2½ miles west of Fish Lake, Oreg.	72.9
Not known	Carmen Creek.....	McKenzie River....	Road crossing, 6½ miles north of Belknap Springs, Oreg.	206
Not known	Anderson Creek....	....do.....	Road crossing, 4½ miles north of Belknap Springs, Oreg.	234
Jan. 18	Unnamed stream....	Lookout Creek.....	NE¼ sec. 31, T. 15 S., R. 5 E., 6.8 miles northeast of Blue River, Oreg.	47.0
Dec. 7	....do.....	South Santiam River.	Mouth, in SW¼SE¼ sec. 36, T. 13 S., R. 2 E., Oreg.	48.3
Mar. 22	....do.....	....do.....	....do.....	24.5
Jan. 20	....do.....	Soap Creek.....	SW¼NE¼ sec. 18, T. 10 S., R. 4 W., at highway crossing, 3 miles south of Suver, Oreg.	37.7
Feb. 17	....do.....	....do.....	....do.....	61.0
Jan. 20	....do.....	Glenn Creek.....	SE¼SE¼ sec. 8, T. 7 S., R. 3 W., at road crossing, 4 miles northwest of Salem, Oreg.	238
20	Glenn Creek.....	Willamette River..	SE¼NW¼ sec. 20, T. 7 S., R. 3 W., at road crossing, 3 miles northwest of Salem, Oreg.	153
8	Beaver Creek.....	Gales Creek.....	Sec. 10, T. 2 N., R. 5 W., at road crossing, 7 miles northwest of Gales Creek, Oreg.	170
8	Unnamed stream....	....do.....	SE¼ sec. 26, T. 2 N., R. 5 W., 1½ miles south of Glenwood, Oreg.	76
22	Unnamed creek.....	East Fork Lewis River.	SE¼ sec. 5, T. 4 N., R. 1 E., at crossing of U. S. Highway 99, 3.7 miles southeast of Woodland, Wash.	14.1
18	....do.....	Columbia River....	SW¼ sec. 19, T. 7 N., R. 1 W., at old highway crossing at Carrolls, Wash.	34
18	Mill Creek.....	Cowlitz River.....	SE¼ sec. 8, T. 12 N., R. 7 E., at crossing of State Highway 5, at Randle, Wash.	82.7
31	Unnamed creek.....	Tilton River.....	N½ sec. 32, T. 14 N., R. 5 E., on State Highway 5, 4 miles south of Mineral, Wash.	67
18	....do.....	Olequa Creek.....	NW¼ sec. 8, T. 11 N., R. 2 W., at county road crossing, 2½ miles south of Winlock, Wash.	15.1
23	....do.....	Toutle River.....	NW¼ sec. 30, T. 10 N., R. 1 W., at Tower road crossing, 4 miles northeast of Castle Rock, Wash.	20.4
Dec. 4	South Fork Necanicum River.	Necanicum River...	At diversion dam in NE¼ sec. 30, T. 5 N., R. 9 W., about 8 miles southeast of Seaside, Oreg.	1,300
4	Asbury Creek.....	Pacific Ocean.....	Mouth, 5½ miles south of Cannon Beach, Oreg.	133
Jan. 22	....do.....	....do.....	....do.....	234
18	Unnamed stream....	Tillamook Bay.....	Road crossing at north edge of Bay City, Oreg.	168
17	Weiss Creek, South Fork.	Eckman Creek.....	Waldport diversion, 3 miles southeast of Waldport, Oreg.	26.0
Feb. 5	....do.....	....do.....	....do.....	8.6
Dec. 10	Unnamed stream....	South Umpqua River	Road crossing, South Stramer St., at Marsters St. in Roseburg, Oreg.	98
Jan. 18	....do.....	....do.....	....do.....	169
Dec. 10	....do.....	....do.....	NE¼SW¼ sec. 3, T. 27 S., R. 6 W., at road crossing, 4 miles northwest of Roseburg, Oreg.	63
Jan. 18	....do.....	....do.....	....do.....	135
Feb. 3	Buckhorn Creek....	Little River.....	NE¼ sec. 30, T. 26 S., R. 3 W., at road crossing, 1 mile south of Glide, Oreg.	319
Jan. 18	Gettys Creek.....	South Fork Coquille River.	SE¼SW¼ sec. 35, T. 29 S., R. 13 W., at culvert on Catching Creek road about 5 miles southwest of Myrtle Point, Oreg.	186
18	Jackson Creek.....	Bear Creek.....	SE¼NW¼ sec. 25, T. 37 S., R. 3 W., at road crossing, 2 miles west of Jacksonville, Oreg.	108
Dec. 10	Jones Creek.....	Rogue River.....	SW¼ sec. 15, T. 36 S., R. 5 W., 2 miles east of Grants Pass, Oreg.	221
Jan. 18	....do.....	....do.....	....do.....	244

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